

Leaf American **FORESTS**



SEPTEMBER 1933

PRICE 35¢



FRIEND AND NEIGHBOR

CLOSE to those who live in small towns, and farther out upon the farms, is the helpful service of the telephone operator.

In the truest sense, she is both friend and neighbor. Ties of kinship and association bind her to those whose voices come across the wires. Through her switchboard pass many messages that are important to the life and business of the community.

Bright and early in the morning she puts through a call that helps a farmer locate a drill for sowing oats. Another connection finds out if Jim Thomas, "over near Bogard," is feeding a bunch of calves and needs any shelled corn. Another gets the latest price on heavy hogs for Bill Simpson, and helps him catch the market near the

top. Through the day she aids in calling a doctor for Mrs. Moore, whose baby is ill. Plugs in an emergency call that sends an ambulance east of town. Puts through a long distance call for Bob Roberts, whose boy attends the state college. Then, through the night, stands ever ready to help those in need.

Constantly in her mind and activities is one fixed, guiding purpose . . . "Speed the call!" And the further thought that she serves best when she serves with courtesy and sympathetic understanding.

In the bustle of the city, as in town and country, that is the established creed of every employee of the Bell System. Its faithful observance in so large a percentage of cases is an important factor in the value of your telephone service.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY



Entered as second-class matter at the Post-Office at Washington, D. C., under the Act of March 3, 1879. Acceptable for mailing at special rate of postage provided in Section 1103, Act of October 3, 1917, authorized July 10, 1918. Additional Entry at Baltimore, Md., December 29, 1931.

Included
12-4-33



AMERICAN FORESTS

OVID BUTLER, Editor

L. M. CROMELIN and ERLE KAUFFMAN, Assistant Editors

Published Monthly—35 cents a copy—\$4.00 a year

1713 K Street Northwest

WASHINGTON, D. C.

Vol. 39

SEPTEMBER, 1933

No. 9

CONTENTS

<i>THE COVER</i> With the "Trail Riders" in Camp Photograph by B. L. BROWN	
<i>THE STORY OF "HAY HOLLER"</i> By JOHN THOMPSON AUTEN	387
<i>MOUNTAIN CANARIES COME NORTH</i> By J. N. HESSEL	390
<i>TREE ARBORETUM OR FOREST ARBORETUM?</i> By WARD SHEPARD	392
<i>RATTLERS AND THEIR BITES</i> By WILL C. BARNES	396
<i>RESURRECTING A FOREST MONSTER</i> By R. V. REYNOLDS	399
<i>THE PIONEER TRAIL RIDERS</i>	401
<i>EDITORIAL</i> The New Frontier	405
<i>20,000 MEN IN PENN'S WOODS</i> By HENRY CLEPPER	406
<i>THE JOYS OF ACROPHOBIA</i> By PAUL HOSMER	408
<i>THE PINE</i> Poem by BESSIE RAINER FORD	410
<i>A FOREST PAGE FOR BOYS AND GIRLS</i> Conducted by WAKELIN McNEEL "Backyard Woodcraft"	412
<i>LODGEPOLE PINE (Tree Series)</i>	414
<i>AROUND THE STATES</i>	416
<i>CONSERVATION CAMPS TO FEEL POLITICAL PATRONAGE</i> By G. H. COLLINGWOOD	418
<i>ASK THE FORESTER</i>	421
<i>BOOK REVIEWS</i>	425
<i>"WHO'S WHO" AMONG OUR AUTHORS</i>	432



TO LAND SUCH AS THIS IN 1800
CAME THE PIONEERS — CLEARING
SMALL PATCHES AND BUILDING
THEIR HOMES — ROOTING THEM-
SELVES AND THEIR FAMILIES FIRM-
LY TO THE HILLS AND VALLEYS
THEY LEARNED TO LOVE. AROUND
THEIR SIMPLE, RUDE HOMES CEN-
TERED ALL THE HOPES AND JOYS
OF THE FAMILY.

SOME OF AMERICA'S LOST DOMAIN
TODAY. "SEVENTEEN MILLION
ACRES IN FOUR CENTRAL STATES
ALONE"! WRITES THE AUTHOR,
AFTER A SURVEY. "AS I LOOKED
AT THE BARE, GULLIED HILLSIDES,
ABANDONED FIELDS AND DESERT-
ED, ROTTING HOMESTEADS, I
COULD NOT BUT THINK — 'HERE
WAS AN ENEMY THAT TOOK ALL.
HE EVEN PLUNDERED THE SOIL.'"



AMERICAN FORESTS

Vol. 39

SEPTEMBER, 1933

No. 9

THE STORY OF "HAY HOLLER"

Where Is Written The Drama of America's Lost Provinces
In the Central States

By JOHN THOMPSON AUTEN

Photographs by U. S. Forest Service

PUT your finger down on a map of Ohio, Indiana, or Illinois—on that portion of those States where the glacier did not exert an influence, and you will touch or be near an abandoned farm. The same is true to a greater degree in any part of Kentucky outside the "Bluegrass," and in any portion of Tennessee outside the "Nashville Basin." One has grown accustomed to hear of the abandoned farms of New England—poor farms left for good ones in the Central States; but is he aware of the extent to which depletion and abandonment are today common in the Central States? Right now there are seventeen million acres of land in the corn belt states alone which have been

depleted to the point of exhaustion. In the light of present over-production this may not seem to be such a calamity. From the standpoint of present production of grain this may be true; but grain is not the whole story.

In the valleys in southeastern Ohio about the year 1800 came pioneers who cleared small patches of ground and built cabins. Game was plentiful and small pieces of land were sufficient for all the needs of the family. The soil was loose and productive, but there was no market for surplus produce; so little land was cleared. The prime object of the early family was to build a home. Around this simple, rude home centered all the hopes and joys of the family.



"'Hay Holler' is gone never to return. Its day of prosperity was based upon a fallacy. The depression has driven the prodigals home for refuge, but its agricultural connotation is of the past. I rechristen it Peaceful Valley in the hope that out of the wreck and mechanization of American life it may again somehow provide that dignity of living and communion with nature that has been the source of our spiritual leadership."

At a little later date lumbering began and the settlers found labor in the woods. In many sections of southeastern Ohio the land was cut over and over for charcoal. Several iron furnaces produced excellent iron for a generation, fed with charcoal from the oak and hickory of the virgin and second growth woods. More and more land was cleared and with the passing of the iron furnaces about 1880 the nature of the country became agricultural. Hillsides were cleared and planted, cultivated areas expanded until a comparatively large proportion of the land was improved. In 1880 in Vinton County, Ohio, sixty per cent of the land was improved; in 1930 the improved acreage had fallen to twenty-six per cent.

The first time I saw Hay Holler was on a glorious fall day. The leaves had put on their autumn colors; a mystic blue haze hung over the hills and veiled the little coves across the valley. There was that pleasant, restful retrospective atmosphere about the day—a sort of melancholy sweetness that beckons one after the hurry of busy summer to sit for awhile in the warm sun and rest in reminiscent mood. I stopped in a little country churchyard overlooking the valley and silently read the inscriptions on the rough and leaning stones. Now and then I gazed on the peaceful scene in the valley below. A quiet hush was in the air. The autumn colors glorious in pastel shades seemed softly toned to add a dignity of requiem to the scene. The sky was blue above and here and there white fleecy cobwebs drifted slowly down to settle gently among the grave-stones and into the little valley. Down below was a cabin deserted and decaying, leaning on one hip as though it had been left behind and growing tired stopped there to end its days in the fields of its youth. Across the way was a scarred hill, briar-covered, with here and there just a hint of furrows long since strangers to the plow. From the top to the bottom of the hill ran a jagged ugly scar where the rain of many seasons had wantonly carved for itself an ugly path from the soil of the deserted field.

So this was the home of the early Indian fighters! Here in this little isolated, sunny valley they hewed out their homes. In these hills now all but denuded of trees was once the great forest, from whose somber depths a fawn now and then scampered and quickly returned in flight. Was that a bear I saw on the opposite slope, and did I hear the gobble of a wild turkey? No, they had departed and left no trail. I glanced down at the grave stones. The pioneers too had departed with the forest.

I was looking over America's lost domain—17,000,000 acres in four Central States alone. The hand of the enemy has lain heavily on this land, and as I looked at the bare, gullied hillsides, brush-grown, abandoned fields and deserted rotting homesteads, I could not but think, "Here was an enemy that took all and left nothing. He even plundered the soil." The peaceful quiet of an autumn day was the setting for this final act of the lost provinces, hostages to a passing era.

Just why has this vast area now become barren and all but worthless as rural provinces? Why are the fields abandoned and growing up to brush? Why are the hillsides gullied? Why did the valleys and hills produce for a generation then become worthless? To pursue the question into all its ramifications would involve a study of the country's economic development for the past hundred years, the growth of cities and manufacturing, the greater remuneration for labor in industry, the advent of farm machinery with its tremendous possibilities on the better land. But disregarding all this, one fact stands out clearly. This land never would have been abandoned had proper methods of forest culture been followed along with farming. This hilly land never should have been cleared completely.

Many thousands of years ago when the ice came down from the north and covered much of the land surface north of the Ohio River, the ridges and rough spots were ground off smoothly and the surface covered deeply with pulverized soil material. Non-glaciated areas were left steep and in general with shallow soil, which during the years that followed, the forest cultivated. Its roots loosened the upper surface, its falling leaves enriched its quality, and its leaf litter protected it from washing. As long as the hills remained forest-covered, they were fertile and productive, but when the forests were removed the surface soil gradually washed off and the clay subsoil, exposed to summer suns, baked so tightly that hardwood trees could not reproduce themselves.

Under these conditions the loose soil on the hills succumbed to erosion and washing and was carried down onto the valleys. The farmers of hilly sections of Tennessee say "We farmed the hills till the soil washed into the valleys; then we farmed the valleys." This was very well until the underclay on the hills washed down and covered the fertile soil in the valleys; then the valleys too were rendered infertile.

Any plan of reconstruction must reckon with trees and the native population of the hills. No scheme of moving out the hill people will ever be successful—nor is such a procedure desirable. There is land and plenty of it for forests which is now unproductive for agriculture and there must always be a native population in any forest to care for and protect the forest from fire.

The people of these hills love their homes with a fierce, passionate attachment. The object of reconstruction should be to make more homes and build the devastated regions into self-supporting communities with the forest as a background protecting the streams and soils, and providing labor and local industries. The hill folks have come down from generations of people who were reared in close communion with the woods and nature. Theirs is a love for their home hills that amounts to an obsession. They sometimes leave but never do they forget or lose that tender and deep-seated affection for the protected little coves and the cabins under the hill.

I well remember the first time I met Jake in "Hay Holler." I wanted a man to help me in digging some soil wells in order that I might study the soil of some of the abandoned fields and remnants of woods. I inquired of a crew boss from a paper company who was superintending some tree planting operations. "Yes, I think I have a man for you," he said. "We'll finish our job today and I shan't need him for a few days."

I had walked several miles hunting the crew—up valleys and over steep mountainous country and I wasn't particularly anxious to look further. In response to his call, Jake came over to us. He was a small man of about forty years, weighing not over 150 pounds, but there was an air of restrained strength about him. He came deliberately, no eagerness, no curiosity, and with an air of discipline. He asked no questions, but quietly and quickly made arrangements to meet me the following morning and quietly returned to his work without delay.

I was curious about Jake. He was a product of the hills and his philosophic mien intrigued my interest. The next day it was necessary to get additional help, so Jake brought his brother over from the next valley. What was an enigma to me in Jake stood out clearly when I saw it repeated in Ott. Ott was much younger, but both men had the same fatalistic, seasoned expression. One could sense that hardships were the norm. There was more; there was character and the stamp of the quiet hills—ruggedness, strength, unostentatiousness, dignity, dependability, kind-

ness. It is not the big things that give an index to character. Jake exhibited more kindness of character in ten minutes in helping his brother dig a hole in the ground than many people would in days of talking. Little monosyllables as he helped Ott to remove a difficult boulder—taking the spade or pick away from him when the “going” got hard.

Ah, that’s it. I caught it clearly. The mountaineer has a fanatical sense of protection for his own—an almost fierce zeal against the hardships which crowd in upon the little isolated communities. He has his back against the wall.

He has made his defy to nature.

“Do your worst, I know I am in a tough spot, but I’ll see it through.” Then when nature in her changing moods grows soft and caressing and spring settles down in the little valley and the hills are kissed with green—how the tendrils of affection twine round the heart for the little valley in the hills.

After all, what is more alluring than a valley where figuratively one may put his back against the solid hills, feel the warm sun come in spring and the violets spring up at his feet? Why does one frequently prefer in a strange restaurant to take a table against the wall or in a corner? Isn’t it a savage carry-over from the days when for protection the savage made his camp against a rock wall and faced his enemies from one direction? Well, the mountaineer has found his rock. He has a complacent, tolerant attitude toward the outside world. He is sufficient unto himself, quick to anger with his back to the wall. And as his loved ones, scorched by the same heat, crushed by the same hard burden, furrowed and drawn and prematurely stooped, pass on to the little churchyard, there is a cementing of associations of heroic struggle and tender protective love for his own that forever chain him to the hills.

I had hoped to draw out Jake to talk about himself. Finally almost despairing of success, I had paused to rest and look across at the opposite hills. In rather ebullient fashion, I remarked: “Say, wouldn’t that be a fine place to build a cabin up there by that great rock outcrop? What a magnificent view!”

I said this spontaneously without intending it for effect and, to my surprise, Jake warmed up for an instant as though he had been caught off guard.

“Yes, Professor Brown said he would like sometime to build there.”

It was not a very long sentence, but by the tone, and the

quick flash of interest I knew I had struck “fire.” Jake loved the place.

“Jake, were you in the Service during the war?” I asked abruptly.

“Yes, nineteen months,” he replied. “I was on the SS Connecticut.”

“What were you doing, Jake?” I asked.

“I was in the boiler room.”

“You’d not have had much of a chance if a torpedo had hit your ship, would you?”

“Not much,” he replied dryly without smiling and without emotion.

“This valley used to have more people in it, didn’t it, Jake?” I inquired. He paused.

“See that field down there?” he said, pointing. “Well, that field used to raise six stacks of hay every year. Now it won’t make over two and it’s not as good hay either. Living’s hard here now. Nearly everybody’s moved out, that could get out.”

“I suppose this valley will soon be deserted, won’t it?” I ventured.

“Well, I reckon there’ll always be a few old rats like myself stay on,” he replied dryly.

Jake had been steeped in the wine of the hills—had answered his country’s call—had seen the world—and had at forty returned with a philosophy of life. How I wished I might have penetrated it.

There is a fineness of character in the hill folks, a sureness, a trueness, a sturdiness, a sense of honor not found elsewhere. One clear-eyed old patriarch with whom I had the pleasure of clasping hands had sent three sons to France. One never returned. When the father was notified by the War Risk Bureau that there was \$10,000 due on his son’s insurance, he wrote back: “I have no sons to sell,” and would not accept a cent for himself.

“Dumb!” says the “wisecracker,” but I defy the “wise one” to grasp that old man’s hand and knowing the hard, cruel journey of his life to look unflinchingly into those keen, penetrating blue eyes. The soul of America has passed through these hills. The cradle of liberty was built in hill-rimmed valleys. With the passing of the woods and the abandoning of the little hill farms, something has gone out of American life!

Clearing of land was such a necessity in pioneer days that it became a part of the code of (Continuing on page 426)



Any plan of reconstruction must reckon not only with the trees but with the native population of the hills, for these people have come down from generations reared in close communion with nature, and they love their homes with a fierce, passionate attachment.

MOUNTAIN CANARIES COME NORTH

By J. N. HESSEL

MY first impression of "Grandma" as a beast of burden would hardly bear repeating, let alone printing. Brooks, the packer of the outfit, was even more vociferous in his resentment. But there she lay, in the bottom of the Forest Service truck. No force, no coercion, no profanity could induce her to move out from under the sharp hoofs of her traveling companions. She was down and she meant to stay down, in spite of anything we could do. It was our first sight of the "string" and, incidentally, the first appearance of burros on the Selway National Forest, in Montana. As an experiment, twenty-five had been shipped up from the south to be used as pack animals by the trail and traverse crews doing summer work in the woods. This particular bunch was ours—four burros and Grandma. We spent two days after their arrival cutting down our outfit to make it small enough to be packed by the four "mountain canaries." It was quite a job for we had to carry enough grub to last two weeks for a three-man crew. We eliminated the fly and cut down the size of the tent, sacrificed a good camp stove for a tin-shelled shepherd's oven, and cut out the emergency rations and field telephone.

Nobody knew what names the individuals of our string answered to so we called them Tiny, Shorty, Shaggy, alias Methuselah, and Jack, according to our impressions of their size, age and sex. The truck driver had christened Grandma on the way up from the remount station. We accepted her name and added several less creditable epithets for alternates.

Grandma was still down and promised to be there all summer. Her hocks and hide were so full of scars, bumps and abrasions that the very thought of putting a pack on her was objectionable. Since her presence was catered to and apparently regarded with some esteem by the other



"Grandma"

four burros we let her trail along as mascot, to hold the family together. We hit the trail one bright day in July. Just above The Falls we had to cross the Selway River over a suspension bridge. Having heard of a burro's aversion to crossing water in any way, shape, or form, the whole crew from the station turned out to view the proceeding. Things went all very well with Shaggy, Shorty and Jack. They led off unconcernedly across the planks and plodded doggedly ahead, never turning a hair at the bridge or glancing at the water. When the turn came for Tiny, however, things began to happen. She stopped short of the bridge by a considerable margin and lazily went about cropping grass alongside the trail, as though the whole affair were not only preposterous but far too much effort for her to be concerned about. Grandma upheld the opinion of her youngest protege when she hobbled up. Bridges were absolutely out. The "Burro Master," as Brooks had come to be called, confidently took Tiny's rope over his shoulder and attempted to lead the miscreant over the obnoxious obstacle by main force. Tiny promptly balked this attempt by planting all four feet, rolling her eyes up in stubborn amazement, and stretching her neck the length of

her hackamore. After raising his blood pressure at this game Brooks dropped the rope and placed a well directed and forceful boot in Tiny's ribs. The boot was heavy and hobnailed. Tiny grunted, flattened her ears, humped her back and, before Brooks could follow up, planted a sharp

hoof to the offender's midriff. The bystanders then witnessed a fine exhibition of bucking, striking, twisting and side-stepping, during the course of which Tiny managed to spill her load down around her hocks and under her belly, so tangled up in rope and paraphernalia that it took three packers more than an hour to straighten her out.



The "String" at Three Links cabin after an eight-mile trip. Skinny (fourth from left) came as a recruit to take the place of Grandma.

At this point the Burro Master's temper had reached such violence that it was necessary to restrain his pugnacious impulses. However, he did cool off and backtracked to the corral, returning with a saddled horse and lariat. We watched with interest. Tiny, with her pack once more in place, had returned to her placid browsing. For all her indifference she might as well have been back in the sagebrush country, a thousand miles from the trials that had so lately attended her. Brooks dropped the noose over her head and took up the slack—none too gently. At this Tiny again rolled her eyes, braced her feet, and brayed as loud as the tight rope would allow. But she went, nevertheless, skidding onto the bridge. It was a battle between horse and burro the entire length of the cable hung structure. Tiny lost. Once across she promptly forgot all about the scuffle and followed along in the wake of the other three. Grandma, seeing the treatment accorded her compatriot, turned around and as unobtrusively as possible made her way back to the hay pile. We left her there thinking it good riddance of the useless old reprobate.

If there is one thing burros love it is independence and no amount of whipping can beat it out of them. You may be able to drive them ahead of you but it is almost always a safe bet that you can't lead them anywhere. After the first day we drove the string ahead. They worked so much better in that fashion we continued to use the system all summer.

About the third night away from the station we were brought to a stand in our blankets by a hair raising sound. There was in it the scream of a mountain cat, the squeak of an ungreased grain wagon, the bawl of a lost calf, the wail of a fog horn, and the chug of a stranded steam boat. We



We never made more than two miles an hour on the best of trails.



At one camp on Meadow Creek we looked up into the calculating eyes of a bull moose.

looked at each other in the half-light of the stars. I could make out the dark outlines of a six-shooter cradled between Brooks' legs. Then came the answering cry from directly below camp, ending in a series of half-choked hiccoughs. Brooks grunted in disgust; Dick swore; I grinned foolishly to myself. Then we all relaxed and hunted more comfortable places on our mattresses of spruce boughs. Grandma was merely announcing her arrival. We had heard for the first time the night song of the mountain canaries—a jubilee of "united we stand."

One evening not many moons later we arrived in camp after a hard day on the trail. We were tired and hungry and hoping, more than anything else, for a quiet smoke after a good meal. Brooks, who was first in line, took one look at camp and bellowed like a wounded bull. There were the burros, and there in the dirt were all our pans, dishes and a few bedraggled scraps of our grub—all the grub, incidentally, between us and Highline Lookout, a good three days' work away. Tiny switched flies complacently and flapped her sleek black ears at us; Old Shaggy twitched his mangy, mouse-colored hide and chewed with relish on the tattered end of an empty flour sack; Shorty finished tearing the cover off a butter can that looked as if it had been mauled by a bear; and Grandma, the biggest trouble maker of all, chewed on our trail notes and backed into the stove, which brought down the pipe with a resounding clatter.

Then a flurry of clubs, sticks and stones descended on the backs, ears and flanks of the retreating renegades that would have done justice to an artist's conception of the hail of brimstone descending on Sodom and Gomorrah.

We learned here that burros would eat anything from raw potatoes to shaving cream, and (Continuing on page 428)

TREE ARBORETUM OR FOREST ARBORETUM?

By WARD SHEPARD

NOW that Washington is to have a great National Arboretum—at once a museum of living trees from the four quarters of the world, a beautiful park, and a forest experiment station—it is natural that we should consider and profit by the experience of Europe in creating scientific forest gardens of this type. Unique among these, though one of the youngest, is the Arboretum of Tervueren, in Belgium, lying a few miles outside the beautiful city of Brussels. Unique, because it is not merely an arboretum, but a work of art as well, in its conception and its execution. And it is of special interest to Americans because it is unusually rich in American trees, or rather forests—a distinction which gives this article its title. For this arboretum is not merely a *tree* arboretum, but a *forest* arboretum—if one may employ such a redundancy. As an arboretum should

do, it has brought together into one spot, from the ends of the earth, all the principal kinds of trees that can be made to grow in the climate of Belgium, and it has grouped these trees together into their natural associations, thus giving true and life-like reproductions of all the chief forest types of the world.

There are many ways of making an arboretum; and because an arboretum, composed as it is of slow-growing trees, takes generations, even centuries, to attain its maturity, it is all important to choose the best possible way. What might be called the normal or conventional way is to arrange all the trees and shrubs systematically, in the order of blood relationship, so to speak, by orders, families, genera, and species; so that all the pines are assembled in one place, all the many species of oaks in another, the chestnuts in a third, and so on. Such an arrangement has obvious advantages for the systematic student or even the amateur admirer of trees as plant forms. Here a spruce tree from Siberia may be near by one from Maine, an oak from England the next-door neighbor to one from Ohio. The student can thus easily contrast and compare related forms of trees and puzzle out those often minute characteristics of bud or bark or leaf that divide one species from another. Much can be said in



In the Forest Arboretum at Tervueren—a miniature reproduction of a fir-larch forest from distant Japan, with native ferns in the foreground.

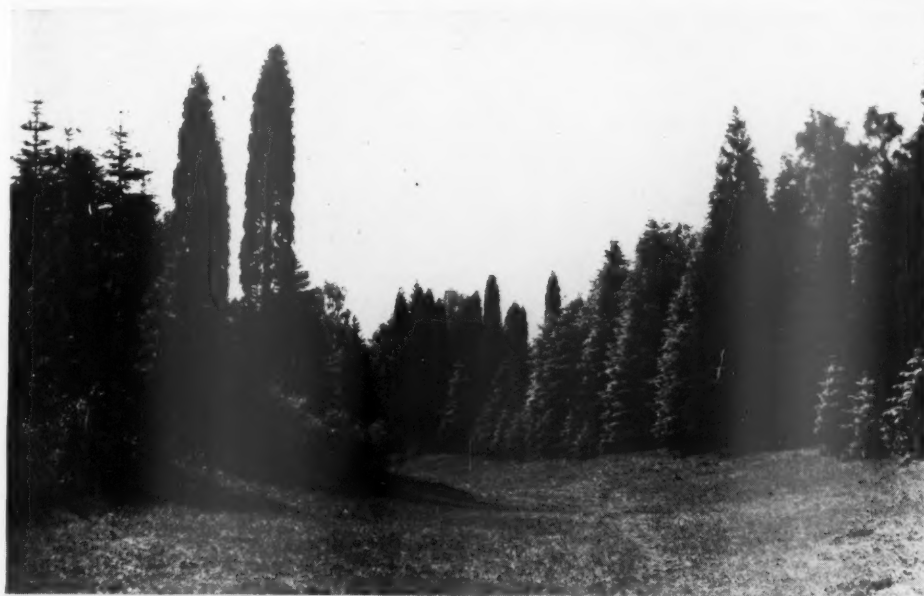
favor of this method.

Another way, and this is the way so beautifully exemplified at Tervueren, can be defined as the living reproduction of *forests*, such as actually exist in nature and fall into well-defined types, as botanists and foresters call them—the natural groups or associations of forest trees that have learned to get along together in the struggle for existence. This is the system of nature rather than the system of the botanical textbook; and yet, as I will show later, it can be successfully combined with a systematic botanical arrangement.

We might illustrate the difference by contrasting the conventional type of museum exhibit with a new type that is everywhere being developed. Everyone is familiar with the usual type of museum exhibit where, for example, stuffed birds, or squirrels, or deer, or elephants, pictures or pottery, weapons or boats, are systemati-

cally ranged, each with its kind and its nearest relative; and everyone is familiar with the "museum fatigue" which too long a visit to these systematic collections usually induces in the visitor.

Now museums everywhere are beginning to take up a new kind of exhibit arrangement—the re-creation of natural groups. It may be an Indian village, or an eighteenth century drawing-room, or a group of marsh-birds in their home surroundings of reeds and water. But whatever the subject—whether from nature or from human life—the key to this new arrangement is the natural grouping that nature or long human experience has worked out through the ages. Animals are shown in living attitudes and natural surroundings, works of art or of handicraft are harmoniously combined in natural interiors, representing the best or the most characteristic human achievement in the struggle to work out a dignified and worthy daily life. And, lo! with such exhibits, museum fatigue disappears, and the visitor remains long to gaze at something full of harmony, repose, and life. Among the most superb of these "natural groups" in America are the African groups by Carl Akeley, in the field museum at Chicago—marvellous and lifelike groups of animals, perfectly modelled and posed by the hand of a great



In this group of Sierra Nevada trees, arranged in true forest type in the Arboretum, is found a bit of California transplanted to Belgium: right center, Big Tree and white firs; background, Incense cedar; left center, Incense cedar, and left, Ponderosa pines.

artist, in attitudes of rest or flight or curiosity or feeding, surrounded by the plants, the rocks, the very earth of their native range.

It is this concept of combining scientific accuracy with the matchless beauty of nature or of high human art that Professor C. Bommer, creator of the Arboretum of Tervueren, has applied to this unique forest exhibit. I think he must have been one of the earliest pioneers in this new field of scientific art or artistic science, for he originated his idea and began to give it living and substantial form nearly thirty-five years ago. Like Akeley, Professor Bommer is not merely a scientist but an artist as well. He has re-created, in this little corner of alien soil in Belgium, the living forests of most of the temperate regions of the world. And, unlike Akeley, he has the advantage of working with living, plastic material, that will gain in beauty and impressiveness as generations go by.

Years ago, as a young man, professor at the University of Brussels, Professor Bommer became interested in dendrology from the practical standpoint of enriching the not over-rich native forest flora of Belgium. In 1898, he formally proposed to the

Superior Forest Council of Belgium the creation of an experimental arboretum, where great numbers of exotic tree species could be carefully tested as candidates for future membership in the forests of Belgium.

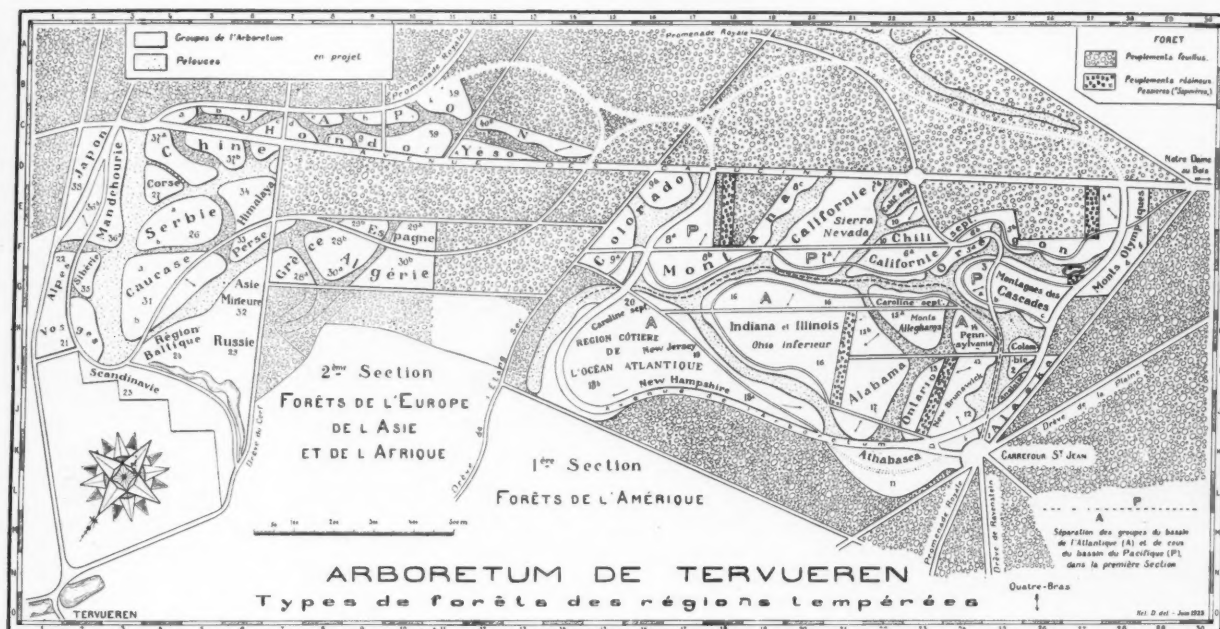
"It seemed to me, however," said the professor, "that it was not enough merely to make known the distinctive characteristics of individual species, but that it was necessary also to adopt a grouping of the collections in such a way as to reproduce the actual composition of the more remarkable forest types of the temperate regions. Thus made, the arboretum would be a true experiment in forestry besides being a mere dendrological collection, and it would besides be of the greatest service in

teaching plant geography." I think, also, in the back of his mind, Professor Bommer had the clear instinct of the artist to create beauty for beauty's sake; but in dealing with practical men in a practical age, it is always wise to emphasize the practical advantages of one's secret visions.

The Forest Council adopted his plan, and fortunately soon found itself in possession of an ideal site. In 1900 King Leopold presented to the people of Belgium the beautiful



Three different forest types rub elbows here—in the background an Oregon type (Lawson cypress and lowland fir); to the left, a northern California type (white fir, variety *lowiana*); to the right, Allegheny Mountains of North Carolina type (hemlock and magnolia).



Part of the ground plan of the Forest Arboretum at Tervueren. It is seen that there are two major divisions or sections—the forests of the New World and the forests of the Old. Distinct forest types from specific geographical regions of America and Europe are grouped exactly as they occur in nature, so that each group is an accurate miniature reproduction of the natural forest it represents.

royal domain of Tervueren, thus giving substantial form to his belief in "the importance of preserving, near large cities, open spaces embellished in a natural manner, for esthetic and hygienic reasons".

The work of creating the arboretum was immediately started, with the collection of tree seeds from all the temperate zones, and the establishment of nurseries. The domain of Tervueren was wooded—the Belgians are enthusiastic foresters and tree-planters—but this forest, instead of being razed to the ground, was simply thinned and the new plantations made under the shelter of the older trees. This method preserved the richness of the forest soil and gave the newcomers natural

forest conditions in which to begin their new life; and as they grew, the original forest was gradually removed, in a series of cuttings, until the new groups were completely disengaged.

From the beginning, the arboretum has been built up in accordance with Professor Bommer's detailed and careful plan. No less than forty distinct forest groups or types are represented, covering in all some three hundred acres. There are two major divisions, the forests of the New World and those of the Old World. In the space devoted to the New World, there are ten distinct forest types representing the Pacific and Rocky Mountain regions, and nine types representing



A vigorous group of Colorado Blue Spruce which, with other evergreens with bluish or "glaucous" foliage, have taken kindly to the climate of Belgium.



The Arboretum of Tervueren affords pleasing vistas of its forest groups. In this group, from British Columbia, are found, from left to right: Douglas fir, poplar, Sitka spruce, mountain hemlock and cedar.

vueren, even the forester, trained to make minute differentiations, is startled by the sharp contrasts of all these forest types brought into such close juxtaposition; and to the layman they bring an absolutely new conception of the wonderful diversity and the striking individual beauty of the multitudinous forests of the world; and of the unexcelled artistry of mother nature when, in one of her most expansive moods, she created these masterpieces of the plant world. A glance at the photographs of Tervueren shows, better than any words, the fine artistic instinct that guided Professor Bommer's hand in making such authentic copies of these "old masters" of the plant kingdom. As I walked through

the Middle Western and Atlantic regions of North America. As typical examples may be mentioned, in the West, the Mt. Rainier, the Olympic Peninsula, and the Sierra Nevada (prolonged into South America by the Andes group), and in the East the Allegheny and the Great Lakes groups. This same careful geographical grouping has been carried out for all the temperate zone; and one rubs elbows here with the forests of America, of Japan and China, of Manchuria and Russia, the Himalayas, the Caucasus, Asia Minor, and Central Europe. In each of these geographical types, the trees are grouped together exactly as they occur in nature; so that each group is an accurate miniature reproduction of the natural forest it represents. The various groups are separated by beautiful stretches of green turf, narrow, smooth ribbons along the numerous little valleys that cut the royal domain. This arrangement, giving ever-changing distant vistas, breaks the monotony of an unbroken forest; and gives to each group the advantage of a full-foliaged forest edge, with graceful branches sweeping to the earth.

To the layman, until he pays close attention, forests look pretty much alike, one evergreen forest like another, one hardwood or broad-leaved forest like another. But here at Ter-

this forest gallery with its enthusiastic and patient creator, glimpsing its admirable vistas opening along grassy glades, my mind went back to many a thrilling day spent in the gorgeous virgin forests and mountain meadows of the Rockies, the Sierras, and the Cascades. Those forests are primeval and stupendously towering; these reproductions are youthful; yet already they are impressive and already they convey the illusion of reality; and I could picture in my mind what they would be a hundred years hence when they should be towering to the sky like the (Continuing on page 411)



This beautiful grouping represents Cedar, Douglas fir and hemlock from the lower zone of Mount Rainier. A hundred years from now they should tower to the sky, like the Gothic spires of Brussels.



The Timber Rattlesnake, or Banded Rattlesnake (*Crotalus horridus*). This is the common rattler of the eastern United States, and is abundant in the mountain areas, frequenting ledgy slopes. As a rule it is not savage.

RATTLERS AND THEIR BITES

By WILL C. BARNES

Illustrations from "Snakes of the World" by R. L. Ditmars, by permission of The Macmillan Company, publishers

TO ANY lover of outdoor life the question of snakes is a matter of vital moment. Forest officers, cowboys, sheep herders and others constantly out in the open become accustomed to the thought that reptiles are part and parcel of their daily life and accept the hazard without much concern.

With the exception of two or three varieties, American snakes are harmless and quite as interesting in their ways as any of the wild things of woods or plains. First and foremost among poisonous snakes is, of course, the rattler. He is followed by the moccasin, the copperhead, and the coral snake. But their habitat covers a comparatively limited area of the United States, and deaths from their bite are few.

The rattler, however, is found from the Gulf of Mexico to the Canadian boundary and from the Atlantic to the Pacific. Only in Maine and New Hampshire is he reported as being absent. He seems quite as much at home in Montana as in Florida, and he enjoys the desert of southern Arizona as much as the humid regions of the Atlantic coast. You will find him below sea level in the Death Valley country of California, and again close to timberline all over the Rockies.

According to Ditmars, there are thirteen known species of rattlers in this country, ten of which are found in Arizona. Texas has four varieties. Don't get the idea, how-

ever, that the Southwest is headquarters for rattlesnakes. Authorities agree that as far as can be determined the center of rattlesnake population is in Pennsylvania, Massachusetts, New York and New Jersey.

Many people, unaccustomed to camping out, consider it absolutely necessary to provide for protection against attacks of these reptiles which really mean them no harm and would gladly be friends if given the opportunity to show their true nature. The most they ask is to be let alone and allowed to go their way in peace. Sometimes, of course, it is otherwise.

Once an insurance agent tackled a Texas cowboy to take out an accident policy.

"You have all sorts of accidents, don't you?" queried the agent.

"Nope, nothin' ever happens to me," was the reply.

"No injuries? No hurts of any kind?" The agent was out for business.

"Well," said the boy, searching his memory for some incident, "there was a rattler bit me once."

"Wasn't that an accident?" commented the man.

"Hell, no!" said the Texan, "the danged snake did it a-purpose."

But unfortunately the snake family has a past and is pay-

ing the penalty for the single unfortunate act of one of its forebears. It was the Serpent that got our original parents into trouble and sent them in disgrace out of the Garden of Eden. Ergo, every one takes it out on snakes whether it be the pretty and absolutely harmless garter snake or the huge surly, quick tempered, diamond-backed rattler of the Florida swamps. The rattler, however, is a fair fighter for he always gives warning of his proposed attack, generally to his own undoing.

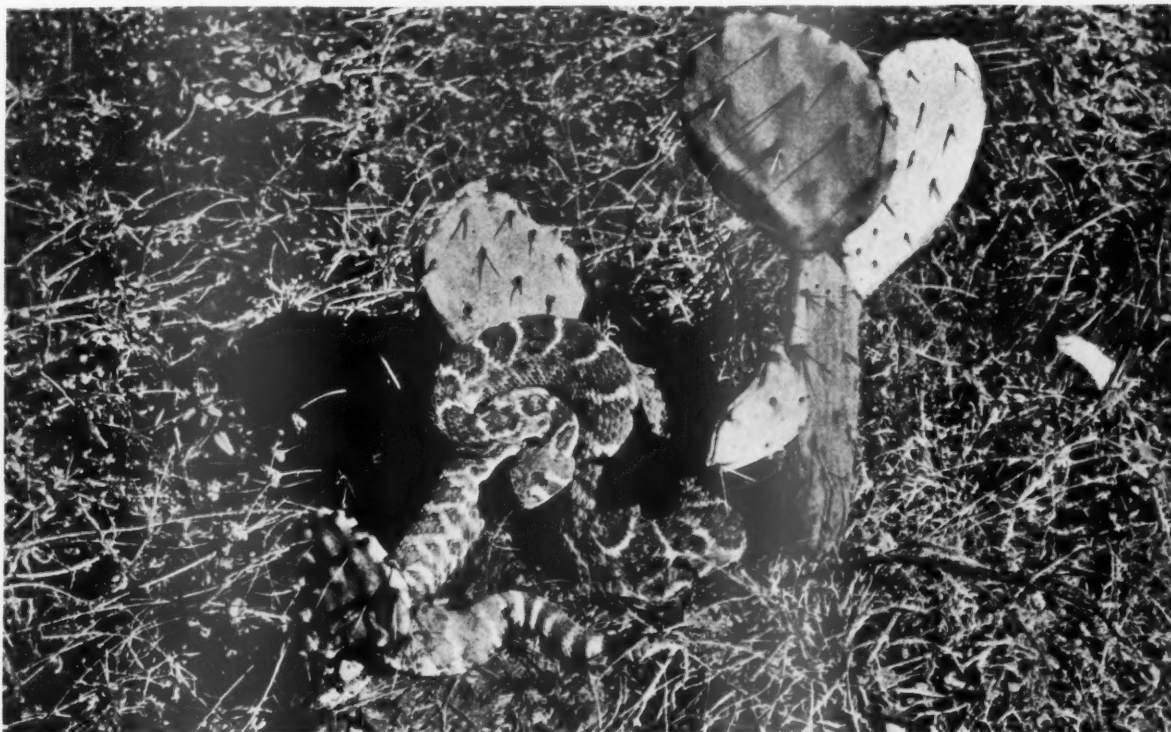
More than 40,000,000 people visited the National Forests and National Parks last year, the majority of whom camped out and tramped over the country fishing, picking wild flowers, taking pictures and exploring every available nook and corner. Yet the number attacked by these reptiles is practically negligible while the fatalities can probably be counted on the fingers of one hand. Unfortunately, there are no records of such accidents on our public playgrounds. They should be kept, just to reassure people that the risk is very low. Nevertheless, people like to be prepared for such an emergency, for it is the unexpected that always happens. The person bitten by a rattler cares little for statistics or percentages of deaths. To him, his case is a national matter. He wants help and wants it quickly.

Up to a few years ago there was but one known remedy for the bite of a rattler. That was alcohol. Whiskey, being largely composed of alcohol, offered the most available remedy. The effect of the venom from a rattler is to coagulate the blood and slacken its circulation. If it does not get into the venous system no harm results. This is why hogs are never killed by rattlers. Their venous system is protected by a thick layer of fat through which the poison does not penetrate. This is also the reason why many people struck by a rattler do not die or suffer serious harm—the venom does not reach a vein. It also accounts for the fact

that the poison may be sucked from a bite and even swallowed without harm, providing, always, that the person doing the sucking has no cuts or sores on lips or mouth.

When planning outings years ago, plenty of whiskey was provided. If not needed for snake bites it afforded an attractive addition to the supplies for the trip. Then scientists discovered that the action of whiskey in stimulating the circulation was about the worst thing that could happen. The poison was the more rapidly carried into the venous system and its distribution made more effective.

So whiskey as an antidote for rattlesnake bites was declared taboo and went into the discard, except among a lot of old fashioned people who always cling to their early training. About that time some chemist started the idea of using permanganate of potassium as an antidote for snake poison. This has been the approved remedy for the past twenty years. Kits for its use were sold everywhere and thousands of people are today carrying them, firm in the belief that they are an insurance against death from rattlers. Most forest officers and park rangers are provided with these kits. They contain two little glass bottles in a wooden case together with a very small hypodermic. In one bottle is alcohol, in the other the crystals of potassium. Pour one into the other and you have a solution which when injected into the flesh at the wound does the business. I have seen it accomplished by simply pulverizing the crystals in a teaspoon, and after slashing the flesh around the bite, rubbing it into the wound. But here in the last year or two comes a new bunch of scientists who tell us we are all wrong; that permanganate is useless as a protection and positively injurious to the patient. Briefly, the claim is made that the action of the permanganate is to cause a sloughing away of the flesh around the spot where injected, forming serious sores that cause the patient untold suffering. The remedy



A Texas Diamond-back coiled to strike. Ordinarily, rattlesnakes do not arch the neck in this manner, but strike from a laterally bunched loop. Rattlers of tropical America, however, rear in even more spectacular fashion, over a foot from the ground.

seems worse than the disease. It is admitted, however, "that in the absence of other remedies permanganate may be used." Evidently a case of any port in a storm.

In December, 1927, the Surgeon General of the United States made the following comment in regard to the use of the above material: "A very interesting article on first aid treatment for snake bites will be found in the Texas State Journal of Medicine for July, 1927. This article, we believe, pretty well disposes of the contention that permanganate of potassium is of value in the treatment of snake bites although it is realized that it is the orthodox thing to apply. It is believed that it would be of distinctly more value to make incisions at the site of the wound made by the bite of the serpent and to apply suction either mechanically or by the mouth."

Science, however, never stands still. Other countries were suffering severe losses from venomous snakes. Study of the situation was begun, seeking a real remedy.

The latest and most successful method of counteracting the effects of snake venom is through the use of what is known as "Antivenin," or anti-snake-bite serum, a concentrated serum derived from immunized horses which have been gradually dosed with rattlesnake venom. This antivenin is the result of years of study and investigation seeking a satisfactory cure. It was carried on in Brazil by officials of that country who have made most detailed studies of this matter. It is now issued and sold in the United States under license from the United States Public Health Service. It comes in small convenient packets with syringe and full instructions, ready for instant use. Presumably it can be obtained at any large drug store.

The results of hundreds of experiments on both humans and animals carried out under the direction of the Antivenin Institute of America, an organization devoted to developing means of preventing deaths from venomous reptiles, seem to prove conclusively the value of this latest method.

Concerning this new remedy the statement of the Surgeon General above quoted says: "In regard to antivenin, there is experimental evidence that it is of value—just how much value under clinical conditions one could not say."

By mechanical suction is meant the use of small affairs called breast pumps which are readily secured at any drug store and doubtless make a better job of the withdrawal of the venom than the mouth, without the possible danger to the person whose mouth is being used.

And so permanganate of potassium follows whiskey into the closed files and its place is taken by this new serum.

"These here now scientists," writes an old time cowboy friend, "they make me tired. First they took away our excuse for carryin' round a flask of whiskey and told us to bank heavy on permanganate of potassium. An' now when we are all broke to regardin' that stuff as the onliest thing ever for snake bite, along comes a new outfit an' tells us there's nothin' to it, an' that this here now old horse serum is the only sure fire stuff. Even you had to horn in on the thing and spoil the old time hair rope idea. Ain't there nothin' sacred to you fellers any more?"

Now, of course, comes the natural question—what to do if bitten by a venomous snake.

First,—of all times in your life, keep your head. Don't get excited. That only makes your blood circulate the faster and carries the venom into your system the quicker. Next, be sure you have been bitten. A snake may strike at one viciously but fail to reach his mark. If that part of the body believed to have been struck is covered with the usual clothing the chances are good that no harm has been done. Inspect carefully, however, the spot where you think the reptile struck you. The fangs are very short and sharp. If they have penetrated the flesh you will find a drop or two

of blood oozing from the wound. Severe pains are felt within a very few moments after an effective strike.

The spot swells rapidly. There will be symptoms of nausea. The pulse is rapid.

If convinced you have been struck, get a doctor if possible. He will know best what to do. But if no doctor is available apply a tourniquet above the bite to keep the poison from entering the venous system. Anything will do—a rope, a shoe string, a handkerchief, or a necktie. Twist it with a lead pencil or piece of wood. About every ten minutes loosen the tourniquet for three or four seconds, then tighten. To keep it closed longer is not only awfully painful but may bring about gangrene. Slash the wound a third of an inch deep, and an inch long. An ordinary safety razor blade is excellent and always available. Dip it first into boiling water or hold it over a flame to sterilize it. Make sure there is not a loose fang in the wound. They are often left by the snake. The excessive bleeding caused by the slashing washes the venom from the wound.

If your mouth is sound, no sore lips or gums, you, or a friend, can safely suck the wound to help eliminate the venom. If an ordinary breast pump is handy, use it.

If the antivenin serum is not available keep the wound wet with a 1:3000 solution of permanganate of potassium. Inject it hypodermically around the wound or rub the powdered crystals into it. If the heart is greatly depressed stimulate it with one-thirtieth of a grain of strychnine or one one-hundredth of a grain of nitroglycerine. Lacking these, a teaspoonful of aromatic spirits of ammonia in a warm glass of water at about an hour interval will help. A cup of strong coffee will get heart action also.

Potassium is, of course, to be used only when the serum cannot be had. It is used more to encourage the patient and build up his spirits and morale rather than because of its curative values. If the serum can be obtained use as directed even though from twelve to twenty-four hours have elapsed.

The tourniquet may be abandoned after a couple of hours or even sooner if the pain from it seems to be too severe. If the bite is on the face or where a tourniquet cannot be applied you must depend on the slashing of the wound and sucking the poison from it. As a matter of fact, all authorities agree that this process of getting rid of the poison is about seventy-five per cent effective in nearly all cases. Above all use no whiskey. Every investigator advises that persons who have been dosed with whiskey, and recovered, did so "not because of it, but in spite of it."

Don't get conceited and believe you can handle a rattlesnake without harm because the Hopi Indians in Arizona do so. They and their forbears have been handling rattlers for thousands of years. Coronado's men found them doing it as early as 1540.

The fall round-up in northern Arizona takes place during the period in which rattlesnakes are popularly supposed to be blind. Why blind? We cow persons didn't stop to inquire. All we knew was that during August and early September all rattlers were surely combative and things to be let alone, unless you were looking for trouble.

During the summer of 1888, our outfit had two experiences with rattlers that have always remained clear in my memory. Riding out together from the wagon one morning preparatory to the day's round-up someone discovered a large rattler comfortably coiled under a yucca. There wasn't a rock or a stick anywhere around so Tom Egger slid off his pony and with a "bight" of his "catch rope" whipped the reptile to death. Upon examination we found it to be as ragged as a mangy coyote. Pieces of skin like thin but tough tissue paper were hanging from its body, especially from the head.

(Continuing on page 429)

RESURRECTING A FOREST MONSTER

By R. V. REYNOLDS

*That monster, the Great Dinosaurus,
Led a life that would probably bore us,
He could browse at his ease
On the tops of the trees,
But he perished in days long before us.*

ANON.

TO the wilderness traveller, as the afternoon shadows lengthen, few things are of more importance than the means of building a fire. If the ax turns up missing, he may make shift even in the snow. But if dry matches are lacking, or if there is no wood, he may be in for a taste of the Esquimaux brand of hell.

May it never be your misfortune to spend a cold, dark night stumbling around a tree. In eight hours of such doleful drill a man will commune with his soul enough to last him a lifetime. Thoughts of the lost ax, of blankets, of cabins with glowing stoves. Visions of sizzling bacon, coffee, and the comfort of tobacco. Grumbling, swearing, praying. Yearning for daylight. Wondering whether frozen toes really mortify. And finally a firm conviction that the forests of America have supplied no other product as important as fuelwood.

Our ancestors, fighting primitive conditions, had the same conviction. Three hundred years the white men have been in North America, and for two hundred years of that time wood was the only fuel they had. Without it they could not have conquered and developed the better part of this continent. For sixty years additional, say up to 1890, wood was still the principal fuel. It was only about forty years ago that wood took second place, and coal became the leading fuel in the United States.

Considering its importance in the past, the records of fuelwood are strangely meager. For lumber

there are hundreds of pages of close-set figures. For pulpwood, pulp and paper perhaps a fourth as many. All the other forest products together get about as much space as the pulp and paper figures, and no one of them has a scantier record than fuelwood. Ungrateful men have accepted as a matter of course the priceless benefits that firewood has bestowed upon America, and have given the places of honor to younger, upstart members of the forest products family. Here and now this injustice ought to be rectified. But what can be done at this late date? How

shall we obtain even a crude measurement of the importance of wood fuel at earlier periods? There is only one way — we must draw a picture from such records as exist, filling in the gaps with reasonable estimates. There is plenty of precedent for such synthetic methods. In fact the art of creating images from the vanished past has been recognized and developed by scientists of the highest attainments — the learned doctors of the great museums of natural history.

Stout fellas, those! The lack of complete records wouldn't stop them for an instant. No doubt you have read how they go about it. They seek the haunts of prehistoric fauna in China, Wyoming, or some other place remote from bathtubs, and dig holes in the likely looking spots. Presently some one turns up a fossil tooth. With glad cries the learned ones rally around and scratch dirt with redoubled zeal. Up comes another tooth—



Reproduced by special permission from The Saturday Evening Post, copyright 1933, The Curtis Publishing Co.

"Thirty-two years in the butcher business
an' I never before seen such a animal!"

a jawbone—a section of vertebrae! Sometimes an entire skeleton is discovered, and this the neophyte might regard as a triumph, to be celebrated with wassail and song. Not so the genuine savant. The finding of a complete specimen merely foreshadows the humdrum routine of cleaning it and hauling it to a museum. No opportunity is presented for the exercise of that super-intelligence which is the very essence, or one might say, aura, of the scientific mind.

Believe it or not. The secret hope of the paleontologist is to be unable to find it all, no matter how diligent the search. The acme of his desire is to find no more than two or three fragments of a once gigantic form—and better still if widely separated—a front tooth and the extreme joint of the tail. Having these only his cup of joy runneth over, for he is then obligated by the rules of the order to reconstruct the former owner of the fragments in utmost detail in order to describe it at the next annual meeting of the society.

Gloating over his treasures he goes to work. One tooth of a certain kind connotes another of a certain kind, and so on. He can begin at the head and work through to the tail, or vice versa. Some consider it preferable technique to begin at each end and work to the middle, as there is only half as far to go and hence twice as much chance that the two sections will fit where they meet. As the statisticians would say, he gets a high index of correlation, and—presto! There stands the restoration, leering at the spectators, a joy to everyone except the Fundamentalists.

By somewhat similar methods we shall arrive at a rough estimate of the part played by fuelwood in the great American drama. This restoration is based on three items of published statistics, plus the evidence of a few independent facts and on general knowledge of the habits and equipment of our forefathers. First: Recently the United States Forest Service compiled estimates showing the fuelwood cut of the United States to be 61,000,000 cords in 1930. Second: In 1880 the consumption was 146,000,000 cords, as determined by Dr. Sargent for the Tenth Census, of which 140,000,000 cords were used for domestic purposes. Third: In addition we know the population at each decade back to 1800.

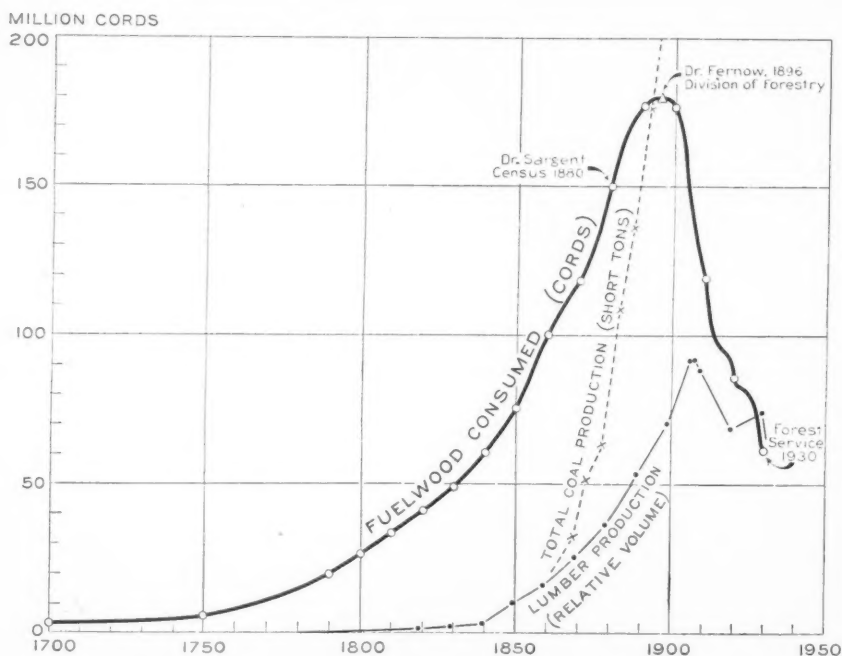
In 1930 the rate of fuelwood use per capita was one-half cord. Something like fifteen per cent of the population used wood as their main fuel. In 1880 the rate of use per capita

was two and nine-tenths cords. It took the cut from 10,000 acres each year to keep Chicago warm. In Washington the Government contracted for several thousand cords every year to heat the official buildings. About sixty-five per cent of the population was dependent upon wood for fuel. Many wood stoves were used, especially in the North.

In 1800 the entire population used wood as fuel. Few, if any stoves were used, and the consumption in fireplaces was far more wasteful. Those were man-size fireplaces. Some cabins were so constructed, it is said, that a team of oxen

could haul a big log close to the hearth. It is reasonable to assume that the rate of consumption was not less than five cords per person. Consumption by the Indians previous to the arrival of the white man in 1620 or thereabouts may be disregarded because their numbers were relatively few and they lacked steel tools.

We thus have a decreasing rate of consumption per person which can be approximated for any decade of the



ESTIMATE OF TOTAL FUELWOOD CONSUMED IN THE UNITED STATES

Fuelwood volume, from 1630 to 1930, is shown to be 13,250,000,000 cords. Whereas the volume of lumber production is about 4,270,000,000 cords (without bark).

period beginning with the year 1800. The rate of each decade multiplied by the population gives the number of cords consumed at that time. Hence we may plot a consumption curve beginning at zero in 1630 and thence following the data for each decade, computed as outlined above. The result is shown in the accompanying diagram. Such is the restoration of the fuelwood monster (*Lignotherium giganteum*), whose size and importance have not, perhaps, been fully appreciated and now stand in a fair way to be forgotten.

One of the easiest things in this world is to reach deceptive conclusions, especially through operations which a Southern forester has well described as "the inept manipulation of dubious data." To some critics this article may fall in that class. However, there is still a shot in the locker, for rough though our methods are, the curve agrees with evidence from independent records. The dotted line drawn upward through the peak of the curve represents the total production of coal recorded at five-year periods. The location of the peak relative to the coal line is significant. The wood peak occurs at the time when the rapidly increasing tons of coal produced exceeded the number of cords of wood. The availability of coal was the reason why wood use slackened and declined. In other words, the location of the peak relative to time if not definitely corroborated is at least very reasonable. The height of the peak also is corroborated by Dr. B. E. Fernow, who stated, (*Continuing on page 426*)

THE PIONEER TRAIL RIDERS

First Trip of the "Trail Riders of the National Forests" Great Success

Photographs by B. L. Brown

LATE in the afternoon of July 17 a young man strode into a telegraph office at Missoula, Montana. His face was bronzed by the sun and his eyes sparkled. About him was a contagious enthusiasm that fairly bubbled, like a man who had sought the fountain of youth and found it.

A busy clerk attended him, looked hungrily out of a window to where the contour of the mountains jig-sawed the horizon, and pushed the message over to the operator. "Lucky devils!" he muttered enviously.

In a few minutes the operator's instrument was clicking the message to The American Forestry Association in Washington, D. C. It read: "Entire party of Trail Riders Trip Number One has returned to Missoula safe, sound and happy. Trip was complete success and through country we never dreamed existed. We are indebted to The American Forestry Association for the privilege of being included." It was signed "The Pioneer Trail Riders of the National Forests."

This telegram, more than anything else, sounds the sentiment of the group of twenty-two men and women who on July 11 rode into the great South Fork Wilderness of the Flathead National Forest, in Montana, on the pioneer trip of the Trail Riders of the National Forest. It came after six

days of wonderment, of marvel, in an untamed wilderness where mountains lose their peaks in the clouds, where canyons sink out of sight, where virgin forests unfold as the sea, where wild life is seen in its unspoiled beauty. It came after a rendezvous with a nature unchanged for centuries.

Sponsored by The American Forestry Association, with the cooperation of the United States Forest Service and the Northern Pacific Railway, the Trail Riders of the National Forests, in six unforgettable days, fulfilled, in this pioneer group, an inherent urge for adventure and for physical exploration, a desire for mental repose and for spiritual adjustment. And for the few remaining primitive areas in America new friends have been won, new and vigorous support has been assured.

"Everyone benefited immensely from this outing," writes Miss Mary Ruffner, of Denver, one of the pioneer riders, "both in spirit and body, and when I remember the ruddy and healthful appearance of us all as we regretfully said goodbye, I really fervently hope that these trips may be indefinitely extended to many other people who have forgotten or who have never known the invigorating charm of the wilderness.



The "Pioneers" themselves!—personnel of the Association's Trail Rider Trip Number 1. Seated on ground — Dr. Walter G. Becker, Miss Grace Jones, Miss Mary Ruffner, Harold Murphy, wrangler, Ray Hamblet, wrangler, C. E. McNally, Boss Packer, Jalmer Wirkhala, Alternate Ranger. Seated—Miss Alice Pierce, Miss Margaret Jones, Miss Marian Simmons, W. M. Alderton, Fred E. Hornaday. Standing—Miss Loretta Bothe, M. L. Thomson, Miss Angela Janszen, Miss Harriet Pierce, R. P. Hutchinson, R. F. Hammatt, Pat McNally, Assistant Guide, Joe Murphy, Guide, A. E. Clancy, Assistant Cook, M. B. Goodman, wrangler, W. J. Beegen, Cook. Seated on roof—Edward Winsor, C. D. Sousley, District Ranger, Miss Carmen Haider, A. H. Hutchinson, Miss Virginia Barney, W. M. Tracy and Miss Nancy Page.

THE "PIONEER PICTURED



Second day. The entire party pausing at a snow bank on the top of Foolhen Mountain, 8,600 feet above sea level, to enjoy the mountain scenery.

Fourth day. A group of Trail Riders enjoying the camp fire at the fourth night's camp grounds, located near the guide's cabins on Holbrook Creek.



Sixth day. Trail Riders pausing to refresh the horses before starting the ascent to Gordon Peak in the distance.



Miss Grace Jones of Moorestown, New Jersey. One of the pioneer Trail Riders, eager to get away at the start of the third day.

ER ED

TRAIL RIDERS" EN ROUTE

Miss Mary Ruffner, Denver, Colorado, enjoying the trout fishing available in the numerous mountain streams passed en route.



Fourth day. Arriving at the guide's cabins on Holbrook Creek, the Trail Riders dismount and await the cook's call for supper.

Miss Marian Simmons, Albion, Nebraska, arriving at camp and prepared to set up her bunk for the night's lodging.



Second day. The party in single file crossing the snow banks on the way to the summit of Foolhen Mountain for a visit to Foolhen Lookout.

"It becomes increasingly apparent to me how much was done for us in every way, how skillfully the trip was planned and conducted and how small the cost was in comparison to other similar trips."

Another pioneer rider, Miss Angela C. Janszen, of Cincinnati, writes that "The trip was a glorious experience of which I have dreamed for years. It surpassed my expectations. I hope next year my footsteps will again point to Montana and its wonderful forests."

From Maurice Thomson, of Minneapolis, comes an enthusiastic letter. "I shall never forget cantering along through the aisles of those primeval forests," he writes, "lying at night in my sleeping bag and gazing up at the star-studded canopy of heaven, breathing in the fragrance of balsam, spruce and fir, while a babbling mountain stream lulled me into forgetfulness."

"Then those exciting moments fighting with the magnificent speckled beauties that frequent the streams and lakes of that country. Or after a hard day in the saddle to plunge into the cool, sparkling and soothing waters, and come out feeling like a king."

"It is impossible for me to express in a few words the debt of gratitude I feel to you for introducing me to this marvelous opportunity. I just hope many others can share the experiences I have enjoyed and will treasure even more in the years to come."

A. H. Hutchinson, of Chicago, "enjoyed the trip immensely and you can be sure I have talked it up and will continue to do so. I'll be there again next year."

And so will Miss Virginia Barney, of Denver. "The subject of the trip has fascinated many of my friends," she writes, "and I have found a great deal of pleasure in going over it with them. In all probability there will be a number of us from Denver to join you next year."

The same sentiment has been expressed in letters from other members of the pioneer group, but space will not permit their reproduction. They will, however, to properly interpret this sentiment, meet again on the wilderness trail.

The interesting "logs" of Fred E. Hornaday, who represented The American Forestry Association on the trip, and Maurice Thomson, of Minneapolis, reveal some of the joys the pioneer riders found in this land "back of beyond."

"After leaving Missoula," Mr. Thomson noted, "We followed the Clark Fork, the headwaters of the Columbia River. On both sides of the road rose high rolling

mountains, clothed with pine and spruce. Then through Hell-Gate Canyon and along the Blackfoot River, with its narrow canyons. Then Monture Ranger Station, where civilization was left behind."

Here the party had first sight of "the fifty-five horses and mules which were to make up our party," Mr. Hornaday recorded, and also "Joe Murphy, our guide and packer, his son, and Bill and Whitey, the cooks, and three wranglers."

Then "boots and saddles" and the wilderness trail! Up Monture Creek to Burned Cabin, the first campfire, and a good sleep. For on the morrow the trail would lead to Foolhen Lookout, 8,600 feet above the sea.

At eight o'clock the party was on the trail, climbing up,

ever up. "Much of the climb was through huge snow drifts," Mr. Hornaday recorded. "This was quite a sensation for most of the party and it was an interesting sight to see mountain wild flowers peeping up through the snow. From the lookout we obtained a magnificent view of the Continental Divide and of the peaks that make up Glacier National Park."

That night they camped near the Danaher Ranger Station, having covered a distance of eighteen miles. But during the day, according to Mr. Thomson, "we saw a number of elk" and around the campfire there "were stories of grizzlies." Though tired, "every one is revelling in this wild beauty and outdoor life."

On the morning of July 13, while the whole country was sweltering in blistering heat, Mr. Hornaday wrote in his log: "This morning our

sleeping bags were covered with a sheet of frost." Mr. Thomson did not notice the cold, although "Bill Tracy's bathing suit, which had been left in a tree to dry, was so stiff that he could hold it straight out." He did, however, become fascinated by the early morning sun. "It is interesting to watch the sun rise in the mountains," he noted. "At five-thirty I could see it on Foolhen Peak. Next time I looked it was half way down the mountain. Then suddenly it seemed to flood the whole valley."

On to Big Prairie through meadows of lupine, blue flax and daisies. And that night "we sat around the campfire and sang to the accompaniment of a banjo which one of the rangers had with him." The Big Prairie Ranger Station fascinated the group, especially the large landing field for airplanes. It is to this station that all provisions and equipment are flown in to the rangers (Continuing on page 424)



PIONEER TRAIL RIDERS OF THE NATIONAL FORESTS, JULY 11-17, 1933

William Alderton, Chicago, Illinois
 Mrs. William Alderton, Chicago, Illinois
 Miss Virginia Barney, Denver, Colorado
 Dr. Walter G. Becker, Baltimore, Maryland
 Miss Loretta Bothe, Cincinnati, Ohio
 B. L. Brown, St. Paul, Minnesota
 Miss Carmen Haider, New York City
 R. F. Hammatt, Missoula, Montana
 Fred E. Hornaday, Washington, D. C.
 A. H. Hutchinson, Chicago, Illinois
 Dick Hutchinson, Chicago, Illinois
 Miss Angela Janszen, Cincinnati, Ohio
 Miss Grace Jones, Moorestown, New Jersey
 Miss Margaret Jones, Moorestown, New Jersey
 Miss Nancy Page, Moorestown, New Jersey
 Miss Alice Pierce, New York City
 Miss Harriet Pierce, New York City
 Miss Mary Ruffner, Denver, Colorado
 Miss Marian Simmons, Albion, Nebraska
 Maurice Thomson, Minneapolis, Minnesota
 Bill Tracy, Ithaca, New York
 Edward Winsor, Oakland, California



EDITORIAL

The New Frontier

TWO hundred years after the settlement of the Jamestown Colony the frontiersman John Coulter was the first white man to enter Jackson Hole, Wyoming. Two thousand miles in two hundred years; to-day much less than twenty-four hours by airplane! In the succeeding one hundred years the country was settled from coast to coast, and the rapid expansion of the population created an extraordinary demand for the food, fibre and mineral resources of the soil. There was every incentive and opportunity for the free exploitation of natural resources. A *laissez-faire* economy admirably adapted to the needs of a pioneer country reached its zenith in the early nineties but with sufficient momentum to carry onward for another generation. But this was an economy founded on extraordinary wants readily satisfied by the successive establishment of fugitive enterprises as the frontier retreated. Their output drawn from the stored natural capital of centuries contributed mightily to the expansion but not the maintenance of American civilization as we know it or would like it to be.

Once the stimulus of the artificial demands incident to the World War had lost its effect, the influence of the stabilized growth of population and concentration in urban centers with changes in modes of living and diet, became sharply apparent. The frontier was gone. The fugitive exploitation of natural resources commenced to break down, notably in the forest products industries. Long before the present partnership of Government and *all* industry was but the dream of a few "radicals" there was serious discussion of the need for the control of production through the aid of public authority. The timber industry thought in terms of the volume control of output to abate competition. Conservationists thought in terms of the sustained production of this output. There was no meeting of minds and there could be none at that time. Realism confronted the one; idealism actuated the other. Conditions became so serious that President Hoover created the Timber Conservation Board to devise ways and means to stabilize the timber industry. The efforts of the Board were abortive and could not be otherwise. And this for the simple reason that no major industry, much less the timber industry, so complex and diverse in its organization, could alone depart from the political, economic and social influences inherent in the traditional American system.

Overnight a new frontier has been opened. Our traditional political economic system has been supplanted and, perhaps, discarded. All industry is now engaged with Gov-

ernment aid and direction in a concerted movement to restore previous levels of purchasing power through wide-spread re-employment of labor and capital, and the control of production. Fugitive enterprises and the full play of individualism have given way to the stabilization of enterprise and the play of collectivism. These are the immediate objectives—the lifting of depressed standards of living. But the new frontier offers a fair field for the joint forces of realism and idealism. Realism demands that the profit incentive, uncurbed on the old frontier, must not be lost though controlled; idealism demands that exploitation for the benefit of the few shall give way to the welfare of the many. These ends can be mutually served. The alternatives are a return to the very conditions which have led to the breakdown in national economy or the set-up of an economy so regulated that all initiative is stifled and life is brought to the deadly levels of mere existence. In the bucolic days of the forties Thoreau once said that most men lead a life of quiet desperation. Only a few years later gold was discovered in California and the West for the next forty years beckoned to Greeley's "young man." The new frontier may not present the same visions of adventure and romance as the old yet it offers a challenge equally stimulating.

Arthur Morgan, chairman of the Tennessee Valley Authority, has said that the ultimate objective of his organization is the building of a new civilization. Signor Serpieri, Mussolini's Under-Secretary of State for Agriculture, has said that the great Italian national plan of land utilization is a problem of civilization, of the revitalization of a nation. The provisions of the Industrial Recovery Act in respect to the conservation of natural resources and those of the Agricultural Adjustment Act while designed to effect "recovery" in the national economy can and are taken to mean much more than that. This generation remembers the "full dinner pail" slogan of the late nineties, and all remember the "chicken in every pot" of the opulent late twenties. "Recovery" of this sort is not the objective of Morgan nor of Serpieri. If a new civilization is envisaged for the Tennessee Valley it can be envisaged for the country as a whole. Our new social philosophy though born of economic desperation need be no ephemeral conception. That would be a cowardly resort to expediency—a mere plucking of the flower rather than a courageous grasping of the nettle. The first step in national planning has been taken in the recent creation of the National Planning Board of the Public Works Administration. A new frontier is ahead.



Tony, who was willing to work
—or fight—for what he got.

20,000 MEN IN PENN'S WOODS

By HENRY CLEPPER

*"A man with a trade is a man indeed,
If the man and the trade are one,
And the trade of a man is an honest creed
When a full day's work is done.
If the trade of a man is the forestry art,
And his standards are high and clear,
A craftsman he'll be and worthy the part,
In the trade he will rank as a peer."*

—AUTHOR UNKNOWN

FROM South Philadelphia, birthplace of many notable politicians, pugilists, and petty gangsters, Tony Celini, aged twenty and unemployed, was lifted by a kindly destiny one day in early June and dropped, gently enough as it happened, into a Civilian Conservation Corps camp in Centre County, Pennsylvania.

Although Tony was transported actually less than two hundred miles, he traveled, in effect, to a foreign land. From the crowded city street, smelly and sweltering in the June heat, where he was boss because no other could lick him in

a fair fight, or a dirty one, Tony awoke one morning to find himself pretty much a stranger among two hundred other boys. Gone were the old familiar city smells of the fish market, the waste gases from trucks, unwashed humanity. Gone the old comforting sounds of auto horns, the jazz orchestra from the radio shop, the mingling of foreign tongues in joy and in dispute.

Tony was homesick for South Street, and the inviting green of the deep forest behind his tent, the beauty of amber sunlight filtering through lacy hemlock branches, the



—Photograph by Pennsylvania Department of Forests and Waters

Part of the "twenty thousand"—Philadelphia boys in camp at Forksville, in the wilds of Sullivan County, in the Wyoming State Forest, where there are plenty of bears!

sweet song of morning birds did not immediately allay his nostalgia. Tony was not indifferent to these woodland attractions, but he felt lost. And he would have chuckled it all and gone home, were it not for one thing: as long as he stayed his family need not be "on da relief."

Those who imagine that the Tonys of the world are all social parasites are mistaken. Tony was not the type who wanted something for nothing. He was willing to work for—or fight for—what he got. In a word, Tony was as proud as anyone. And if "Onkle" Sam was willing to pay him thirty dollars a month for planting acorns, why, he would plant acorns and if they didn't grow it wouldn't be his fault.

Later when Tony and his brother "civies," clad in blue denim overalls, khaki shirt, shapeless cloth hat and army shoes, stood before the lieutenant in a shuffling, wavering, slouching line that almost brought tears of despair to the eyes of the regular army sergeants, they were counted off in squads. Because his stocky, truculent figure inspired the

workers for one afternoon. But from that day on, no squad was imbued with a greater sense of forest conservation than the one under the command of Corporal Cellini.

Tony had long known in a vague sort of way that there were two kinds of trees: those with stiff needles as Christmas trees, and the other kind—those with big leaves. As the work progressed and as Tony became more familiar with the details of the woodland surrounding him, he began to suspect that the trees displayed greater variations than he had imagined. "The oak, now. What was that proverb? Mighty oaks from little acorns grow. Show me an oak."

Tony made a friend who showed him one. A young forester of the State Forest Service, Dick May, visited camp about once a week. Often in the evenings he and Tony and a few others went for walks through the familiar yet unknown woods. Dick showed Tony an oak tree—a white oak. Soon Tony knew the red oak, the rock oak, the scrub oak, the pin oak. Then there were others to learn—pines, maples, hick-



From the first "recruit" days in the forest camps there has developed an almost unbelievable activity. Detachments of men are busy constructing forest telephone lines and roads. Others are busy improving timber stands, planting trees, and doing erosion control work. Here a group is shown "checking out" of an Army maintaining camp for a day's work under the supervision of trained foresters. At the end of the day they will "check in" again.

lieutenant's confidence, Tony was made a temporary squad leader. He and his crew were issued shovels, picks and mattocks and put to work digging side drains along a new State Forest road.

There was no discipline. Members of the squad resented being bossed by one of their kind. They objected to working steadily when no higher officials were present to supervise their activities. As a consequence, Tony, in less than a week, had an incipient mutiny on his hands. Several other squads had beaten up their leaders, according to camp rumor. Tony, too, was put on the spot. But Tony had profited by his two years in high school. He remembered, in history, how the great generals of the world had won their battles by carefully choosing their positions and then attacking swiftly. He put down the rebellion in his squad, though in doing it the Quartermaster Corps lost two cotton undershirts, Tony lost a tooth, and Uncle Sam lost the services of two

ories, willows. "Cripes," said Tony, "who'd a ever thought there was so many different kinds of trees?"

We may smile at Tony's naive astonishment when told that there are hundreds of different kinds of trees. But how many of the thousands of boys scattered throughout the country in Civilian Conservation Corps camps knew any better? Not many. To most of the men the forest was a closed book. Tough guys from the crowded sections of Pittsburgh and Philadelphia, boys who were members of notable street fighting gangs, boys, in short, "who could take it" were for weeks ill at ease in the woods. Bears, for instance, had been seen in various places. Porcupines were numerous near some of the camps in the northern tier counties, and didn't porkies throw their quills? And rattlesnakes? And copperheads that strike without warning? And hoop-snakes? Superstitions die slowly.

Who shall describe the con- (Continuing on page 427)

THE JOYS OF ACROPHOBIA

By PAUL HOSMER



"I, unconsciously, said 'yes.'"

AS I SIT here this evening with my typewriter in my lap, all humped up like a buzzard over a dead rabbit, I am reminded of the fact that I am forty-four years old. Amongst other things, I attribute my longevity to the fact that I have never taken up mountain climbing as a life work. This is brought to mind by a little mistake in judgment I made the other day when, in wandering around the town in a benign stupor I unconsciously said "yes" when my good friend, Chris Kostol, asked me to climb Mt. Washington with a group of Skyliner mountaineers. Under ordinary conditions I can scent trouble in a remark of that kind and I should have suspected Chris at the outset. If what I laughingly refer to as my brain had been functioning at all that day, I would have displayed all the rousing enthusiasm of a geoduck in a mud bank and stayed home on the front porch.

Probably the reason I slipped was because I had been thinking of taking a little vacation and when Chris explained the advantages to be gained by such a trip in the way of fresh air and exercise and added that the climb was just as safe as a bottle of grape juice at a lumbermen's convention, I absent-mindedly agreed to it. Anyhow, the upshot of it was that shortly after four o'clock the following Sunday morning I was blasted out of a nice warm sleeping bag which I had tucked away behind a bush on the shore of Big Lake in the hope that Chris wouldn't be able to find me. As usual, however, practically the first body he stumbled over was mine and I was forced to crawl out into a cold and murky world over which the dawn had not yet burst. Our party had gathered during the night—eleven men and five women—and the orders were to throw some breakfast into us in a hurry and get ready to hit the trail as soon as possible. The mountain was so far away I couldn't even see it in the early morning light and I exhibited all the sprightliness of a lily plucked two weeks before when I learned that it was six miles

to the summit from where we stood. I realized right then how dumb I had been when I consented to go on the trip.

As soon as it was light enough to start walking without falling into the lake the party started through the woods, and during the next hour I, personally, crawled under and over 180,000,000 feet of down timber, all of it cross ways to the trail we were following. I listened moodily to somebody's dissertation on flowers—that bird knew so much about botany he could tell you the Latin name for the Good-year Rubber Plant—and every now and then I caught a glimpse of the messed up peak of Mt. Washington, just half way between us and the moon. The mountain looked pretty big, but not particularly interesting; like the south half of an elephant. I saw no reason for running a temperature over it. Little by little, however, I began to work up a sweat and in spite of all my exertions I discovered I was making about the same speed as a mud turtle with an anchor tied to each flipper. It was up hill all the way and I began to complain about the way these mountains were arranged over the outlying districts of Oregon. Gloom settled over me like a cloud of tear gas. By eight I found myself standing uncertainly on an insignificant ledge and clinging desperately to a rock wall with both hands. Chris,

who was walking behind me, probably so I couldn't duck out of the party, informed me that now we would begin to climb. This was cheering news

inasmuch as my legs were so tired already that my knees bent both ways and I could sit down either forward or backward. Below us was a couple of hundred feet of nothing at all and every time I looked at it I nearly fell in on myself. One of the party remarked that if any one slipped he would probably get hurt, which was just the same as saying that you might sneeze if you got hay fever. This rock ledge was the first real rough going we had gotten into so far and I failed to work up any enthusiasm over it. At

the end of another hour we were faced by a sharp wall over which I scrambled like a stray cat over a garden fence and shortly thereafter succeeded in catching up to the party which was seated under a perpendicular cliff resting. It was here that I received



"Little by little, however, I began to work up a sweat."

my first severe shock. At the top of a rock slide was what appeared to be a solid ledge about three feet high and I struggled up to it wearily, knocking sand and rocks into the laps of the people below me. I had the idea in mind of finding a seat on the ledge while I observed an old Spanish custom of slow starvation known as eating off the lap. But I didn't sit on the ledge. I grabbed hold of it with one hand to pull myself up and thought it felt pretty thin. I glanced casually over the other side to see where the rest of the rock had gone to. It was just eight hundred feet below me. I clapped a hand over my eyes and folded up into a graceful bundle as my heart sloshed up and down like the plunger in a bicycle pump.

Certainly I never looked any worse than I did for the next five minutes. The sight of all that empty space and the knowledge that I had almost sat down in it broke me all up. My face was the color of the bottom side of a catfish and I got a funny feeling in the region of the pancreas. During the rest of the afternoon I had indigestion so bad that all my stomach was good for was to hold up my pants. My friend Chris, whose real name is probably Pernicious Anaemia, took a look at my haggard face and offered as a suggestion that if I felt dizzy the thing to do was to look at the rock walls in front of us. But I got over it by putting my head down between my knees and gazing fixedly into the dirt. In spite of my best efforts I couldn't get my mind off a story I had heard about a man who took an aeroplane up a thousand feet and dove down eleven hundred.

Gradually as I sat perfectly still and gazed into my shoes the worst of the shock wore off and I was able to look around a little. Over to our left another mountaineer, Nels Skjersaa, was hanging a coil of heavy rope over his shoulder and eyeing one of the vilest looking mountain sides I ever hope to meet. It went straight up for fifty feet from where he stood and as far as I could make out there wasn't a handhold or a foothold on it. Suddenly, Nels, who is built of spring steel and Indian rubber, took hold of the solid wall and began to climb straight up like a porcupine going up a tree. My startled eyes searched the immediate neighborhood to see who was pushing him or what was holding him but it appeared that he was doing the thing under his own power. I considered the action unseemly, indelicate, unethical and lousy.

Apparently Nels was laboring under a delusion that he was still on the ground and I began to conceive a feeling of admiration for anyone who could do tricks like that without worrying about how many times he was going to bounce if his foot slipped. Occasionally he paused, clinging to the side of the cliff like a rock lizard while he felt cautiously around for some place to go next. Each time he did this I experienced a queer sensation about what a person might get if a flock of quail suddenly flew out of his shirt collar and I felt like the mule in the paper snow storm that laid down and froze to death just thinking about. Nels, however, felt none of these qualms and continued about his business as calmly as a Hindu fakir taking a siesta on a spike bed. In a few minutes he had reached a platform about four feet square which, from the careless way he handled himself, must have seemed to him as big as the downstairs of the new postoffice. Then he disappeared around a corner of the cliff on his way to the stratosphere ten miles above the earth and I subsided into a gentle state of coma.

The fact that I finally got up courage enough to perform the slack wire act was not due to any desire on my part to emulate the cat-like Nels. What actually happened was that I was practically bullied into going up the rope. There was an extremely attractive little French girl in the party—I hadn't mentioned this before, but as long as I'm being honest about this thing I might as well come clean—and the mademoiselle was having nearly as much trouble getting places



"Words fail to describe the feeling one gets while dangling around in the air on the end of a rope with a thousand feet or so of empty atmosphere under one's feet."

as I was. It occurred to me that possibly I might sidle up to her and suggest that she stay away from sky hooks and ropes and such dangerous appliances. If she agreed it would be a gentlemanly act on my part to offer to sit this one out with her and I could make a more or less graceful exit from the ordeal facing me. It was a very brilliant idea.

While we were waiting for the ropes to be adjusted I managed to climb over to where the young lady was standing. There wasn't much room for it, but we finally found a solid rock that was wide enough for two people to sit on and it was just as nice and cool and comfortable as the cadaver room at a medical school. The rocks around us were looser than a cotton nightgown in a high wind and every time we touched anything it came off and dropped a couple of million feet down into the valley.

My first approach was a fizzle. In spite of a year and a half in France I speak French like a native Bulgarian so I

discarded my original idea of talking in her native language just to make her feel at home. I started right in in English to tell her that I thought mountain climbing was a noble sport, that it was just a lot of good, clean fun like putting castors on grandma's crutches and that if a person kept it up he was bound to reap a rich harvest in good health and physical fitness until his foot slipped. I explained an original idea I had that woman's place was in the home and not in the English channel or up on mountain tops and I thought it would be a good thing, if she felt too tired to make the climb, to stay behind and rest up in some nice soft pile of rocks. I'd be glad to give up the ambition of my life to climb a mountain and stay behind, too, to see that nothing happened to her. It was quite a nice speech.

She said "no" so fast it sounded like a Chinese firecracker in a tin can. She gave me a look that practically amounted to an uppercut and started in to tell me in a few thousand ill-chosen words just what kind of a mountain climber I was. As far as she was concerned, she said, she had gotten that far and she didn't intend to fall by the wayside now that the top was virtually in sight. I was at perfect liberty to stay behind, but she was going up that rope if they had to haul her every inch of the way. She was only a poor, weak woman, but name of a name of a name she was going to finish what she had started. I tried to act as if I had intended to go up the rope all the time; I recalled my army record. No finer trained fighter ever stood in mess line; no handsomer dragoon ever sprawled out on a cot, but from certain things the young lady let drop I some way or other gathered the idea that I was not popular with her and that she considered me about as important as a lead nickel in the First National Bank. My bright little scheme was all shot full of holes and I was beginning to feel like the man who doctored himself for years with the aid of medical books and then died of a typographical error.

About forty parasangs up the side of the mountain I could make out the dizzy figure of Nels perched astride the only solid rock in sight, holding the end of the rope. With a sublime indifference to the fact that there was no place to brace his feet if a strain came on the rope, he waited patiently for me to take hold and pull myself up. Everything to him was safe and secure—just like parking your best girl in front of a navy yard. I tried vainly to think of one last excuse for staying behind and threw an imploring glance at the girl friend to see if she had relented. One look from her, I discovered, virtually amounted to an invitation to come out in the alley, and I took hold of the rope hopelessly. Sweat began to ooze out of me and I was wetter than the middle drop in the Pacific Ocean; I was mortally certain that it was only a question of minutes before somebody would be moving a load of top soil to make room for my chassis. With a despairing sigh I swung off into space.

Words fail to describe the feeling one gets while dangling around in the air on the end of a rope with a thousand or so feet of empty atmosphere under one's feet. My blood

pressure went up so high it acquired a perpetual snow cap. Occasionally I caught a hazy glimpse of the unruffled Nels, perched on his rock showing no more signs of nerves than a petrified turtle and I heard him call to me encouragingly something to the effect that the worst was now over and it was all down hill. All told, I probably wasn't on the rope more than a couple of minutes, but I lived a life time while struggling over the top of the cliff. After a week or two of suspense I finally made the crest. I gave three racking shudders and oozed into a peaceful collapse.

Well, it's all over now. I don't recall just how I got back down the mountain, whether I went down under my own steam, whether they lowered me down in a blanket or whether I just fell off the darned thing. All I know is that by the aid of a couple of husky Norwegian mountain climbers I not only climbed a mountain but got back down again without breaking anything but my spirit. There were several times that I went along mistaking artificial respiration for natural breathing and I could have charged off quite a bit to depreciation on the income tax of life when it was all over.

But I recall feeling a new thrill of life along my keel when

I reached the top. I remember enjoying a long rest on the summit in an attempt to get some of my health back while somebody fed me mint cubes guaranteed to make the Adam's apple soft and pliable. Flying ants were so thick on the top that the only way you could dodge them was to have yourself nickel plated, but I never felt them. I hoped that somebody had had the good sense to bring along a small vial of the well-known Haig boys' safe blowing solution, but nobody had and I drank a quart of water instead. I was in a condition where I was going around

asking other people who I was and I signed my name on the register with a hand that shook so hard I had to hold my pants up with my other hand. But I had climbed a mountain and felt as proud of myself as a colored gentleman who has just had his operation sewed up with white thread.

Now that I'm safely back in bed I have come to the conclusion that mountaineering is a good deal like a washing machine—you get out of it just what you put into it, only you can't recognize it. I climbed Mt. Washington for exercise and fresh air. I got so much exercise out of the trip that ten days afterwards when I leaned over to pick up a sock I tipped over on my front teeth and stayed there twenty minutes, too stiff to move. I crowded so much fresh air into hitherto unsuspected recesses of my lungs that they have refused to function any longer and I've been breathing through my liver for a week.

Something tells me that I'll ascend my next mountain, if any, in an autogiro. I've been watching the development of those things lately and they seem to be just the thing for mountain climbing. They've got them down now to where they can practically land and take off on Uncle Abner's bald spot and they should become popular amongst mountaineers like me, who prefer to keep one foot on the ground.

THE PINE

(A wish)

May I grow like the pine on the crest of
the hill

With plumed head to the sky.

Straight and strong as a rapier blade

May I be as gallant and unafraid

As I watch the clouds go by.

—Bessie Rainer Ford

President Roosevelt Visits Conservation Camps

President Roosevelt was enthusiastic over the healthy appearance of the men and their forest accomplishments as observed by him during a visit of five Civilian Conservation Camps in Virginia on October 12. The camps visited were Camp Fechner on the George Washington National Forest, two camps on the Shenandoah National Park, and camps located on privately owned land near Grottoes and Sperryville.

Tree Arboretum or Forest Arboretum?

(Continued from page 395)

Gothic spires of Brussels or like those tree spires of the western mountains with their almost religious impressiveness.

Look a little more closely at one of these miniature American forests in Belgium—that shown in the photograph of the Sierra Nevada of California, for example. In the middle-right is the clean-cut, vigorous, pyramidal form of a Big Tree (*Sequoia gigantea*), with the figure of a man just to the right. The Big Tree is frequently met with and much admired as an ornamental tree in Europe—especially in Switzerland. To the left of the Big Tree are several white firs; in the background and in the left side of the photograph are the graceful slender spires of incense cedar, and to the extreme left several Western yellow pines. But it is the whole composition, rather than the individual members, that gives this group its striking beauty and naturalness.

In the Mt. Rainier types, on which Professor Bommer has lavished much careful work, taking as his guide Fred Plummer's fine monograph of 1900 on the forests of Mount Rainier—one of the important pioneer contributions to American forestry—the groups are arranged by altitude, ranging from the lower zone of Douglas fir and hemlock (with Sitka spruce, western red cedar, and white fir in less abundance) to the upper forest limit of alpine fir and hemlock. From the start, it has been a part of the plan of this arboretum to include the subordinate vegetation, the shrubs and herbaceous plants that add so much to the charm and interest of the forest landscape; but for budgetary reasons this has not thus far been possible.

In spite of its youth, the arboretum of Tervueren has already yielded valuable scientific information. For example, the growth of the trees, in diameter and height, has been periodically measured for 235 species. Obviously, rate of growth is a prime factor in the suitability of exotic species for naturalization. It is of interest to Americans that of all these many species, those from British Columbia and the Pacific Coast of the United States have made the most remarkable growth. At twenty-five years of age, the lordly Douglas fir has reached a height of nearly seventy-five feet and lowland fir the same, with Western hemlock a close second.

Trees, like people, cling stubbornly to their old habits. Alongside the towering mountain hemlock (*Tsuga mertensiana*) of the lower slopes of Mt. Rainier, the alpine hemlock (*Tsuga pattoniana*) from the upper slopes of Rainier, imagining that it is still standing sentinel-duty on its bleak mountain height, has refused to hasten its growth in this more hospitable Belgian climate and has reached only a third of its cousin's height. Nevertheless it is a beautiful and vigorous tree, standing like a sturdy Scotch terrier among Irish wolfhounds. For color, graceful form, and beautiful foliage, I know of no evergreen that excels it in beauty and few that approach it. Landscape gardeners looking for a slow-growing, dense-foliaged, beautifully formed tree should experiment with this species.

How an exotic tree will behave toward a brand-new climate is always problematical and is one of the most practical of the many questions an arboretum is intended to answer. The Arboretum of Tervueren underwent the acid test in the winter

of 1929, when there were thirty-three days of excessive cold, followed by a very sudden and sharp rise of temperature. This sudden heat wave led to an excessive transpiration of moisture from the leaves of the evergreens, while the roots were unable to take up compensating moisture from the frozen soil. As a result the foliage of many Western American species was killed in the upper parts of the trees. But many other American species successfully resisted the climatic onslaught. Those evergreens with bluish or "glaucous" foliage—having a resinous coating on the needles that gives the characteristic and much-admired bluish foliage tint to such Western species as Colorado blue spruce, white fir, and alpine hemlock and that prevents too rapid evaporation from the needles—were not injured. As a result of this experience, suspicion has been cast on the suitability of some American species, in spite of their splendid growth, for the Belgian climate.

Such findings are only typical of the highly practical and useful knowledge that can be obtained from an arboretum and that will in time be obtained from the New National Arboretum at Washington. But equally important are the opportunities that an arboretum affords for cultivating among the people a knowledge of trees and forests and a love of nature. These opportunities are admirably developed at Tervueren. Here the layman can learn not merely the individual trees, but how they are associated to produce rich and varied forests. The scientist and tree-expert, too, learns much from the study of trees not merely as individuals but in their natural groups. The science of ecology is devoted to the mutual interaction of plants and animals in their natural associations, and an arboretum that provides the materials for such studies as well as for the study of systematic botany is much to be desired. Yet the Arboretum of Tervueren, while emphasizing these forest associations, does not neglect the systematic side of tree-knowledge, or dendrology. The plan provides for systematic collections, arranged by species and genera along the principal winding avenues, but so arranged as not to interfere with the natural unity of the separate groups.

Yet, after all, the scientific interest of an arboretum is not its only nor perhaps its greatest interest. The arboretum at Washington is to be a truly national undertaking, paid for by the nation and to be visited by countless citizens who will come to the Capital in increasing numbers to absorb a little of its beauty and its history, to have a glimpse of its noble avenues and monuments and parks. For every scientist who visits or works in an arboretum and thereby gathers important scientific information, there will be hundreds of lay visitors who will derive some knowledge and more pleasure and artistic education. An arboretum like Tervueren is invaluable in promoting high standards of natural landscape gardening, with those groupings of trees and shrubs which nature has known how to work out so perfectly.

Whatever plan is adopted for the National Arboretum, we can be sure that it will add another priceless embellishment to Washington—a living forest monument which, unlike granite monuments or marble edifices, will never crumble to dust.

The Governor's Luncheon at the Annual Meeting

September 8, the third day of the Annual Meeting of The American Forestry Association in New Hampshire, will be marked by a luncheon at the Mount Washington Hotel to be attended by the governors and official representatives of several States. Governor John C. Winant, of New Hampshire, will serve as toastmaster and Governor Louis J. Brann, of the State of Maine, and Governor Stanley C. Wilson, of Vermont, will respond with reports on outstanding forest activities in their states. This luncheon promises to be one of the dramatic sessions of an unusual forestry meeting.



An Indian Wick-i-up Village

A FOREST PAGE FOR BOYS AND GIRLS

Conducted by WAKELIN MCNEEL

BACKYARD WOODCRAFT

SCHOOLS start this month. Twenty-five million boys and girls will be mobilized again for preparation in citizenship—the second great mobilizing event of the year. The mobilizing of young men of our country in the Civilian Conservation Corps camps is the first; a wonderfully successful accomplishment, comparable to the organizing of our armies for the World War.

When one mentions education, text-books, blackboards, maps and similar things, along with a teacher, come to mind. These are the means by which all girls and boys get some of their education. But all education is not found in schools. Figure it out for yourself. Count the number of hours each day that are spent in school, then multiply this by the number of days in the school year. Multiply the total number of wakeful hours of the day by the number of days in the year. Divide the school hours by the wakeful hours and you will be surprised how small a per cent of a year's wakeful hours is spent in school. Everything that happens every wakeful hour that the senses lay hold on is education—for good or otherwise.

Education is the result of all the influences that affect us. We are a part of all we do, see, hear, say and feel. This sounds rather "professorish," but, as some one has said, a consciousness of these facts marks the dawn of real learning. It is not how much one knows but how much one wants to know that makes the scholar. The thing we enjoy most is often the most educating. With schools under way and the time limited for hikes and camping, boys and girls can't get into the woods as much as they like. My proposal this month is that we bring some of the romance and woodiness of the woods to our

own backdoor yards, that we use some of those hours not spent in school in backyard woodcraft.

Many of the backdoor yards in my neighborhood have shacks or tents made of old canvas, carpets and the like. In one place is a shanty built in the crotch of a large tree. These are the creations of boys following natural impulses. With a little encouragement and guidance these "impulsive creations" could be transformed into the kind the Indians lived in and be a source of pride, and as for education, let's see what a glimpse into backyard woodcraft will reveal.

Is there room in your backyard for a wigwam? In Indian language wigwam means a lodge or dwelling. It is commonly applied to all forms of Indian dwellings. It is made by burying the large ends of poles in the ground, tying the bent-over tops together, running poles sideways for strength, and covering this frame work with canvas, skins, or birchbark. It makes a fairly good winter dwelling with a stove for warmth. The best known, the most attractive, and the easiest to make is the tepee of the Dakota Indians. One would be attractive in any backdoor yard, or down by the creek. Let's make one. It is best to make a model just for practice to avoid making mistakes when constructing a real tepee.

Cut a dozen sticks, twelve inches in length and about the thickness of a lead pencil. Make a hoop ten inches in diameter out of a willow branch. Tie three of these sticks together one inch from the top and erect them to form a tripod. Rest seven of the remaining sticks in the angles formed by the first three, and tie the lower ends to the hoop at regular intervals. Tie the tops together rather firmly and allow the rope to hang down inside.

This is called the anchor rope. Now you have the frame work for the model of a tepee. For a cover you need a piece of muslin twenty inches

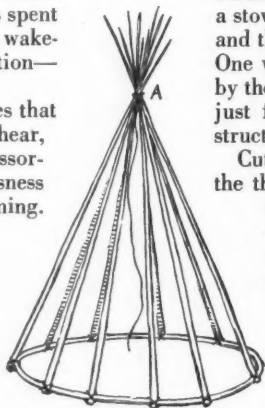


FIG. 1
FRAME OF A MODEL OF A TEEPE

long and ten inches wide. Now look at Figure II. "A" represents the middle point of a long side of this piece of muslin. With "A" as a center and a radius of ten inches, describe semi-circle "BCD." Cut out this semi-circle. Then

cover on a piece of paper, and from it make the cover from muslin.

A tepee for the woodcrafter's shelter is made exactly the same way. Where inches were used in the model use feet in

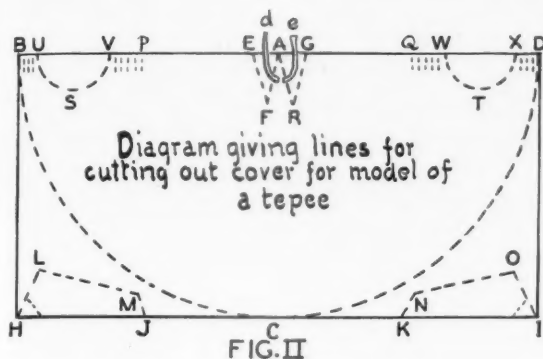


FIG. II

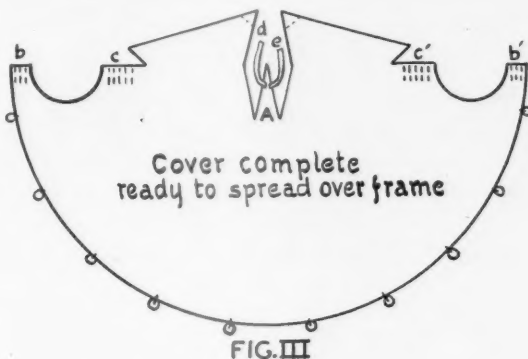


FIG. III

"AB," "AD" and "AC" are each ten inches. From "A" measure off an inch each way and cut out two equilateral triangles with bases of one inch and sides of two inches. Two and one-half inches from "B" and from "D" cut out semi-circles with radius of one and one-half inches. This means that "U" and "X" are one inch from "B" and "D," respectively. From the unused parts of the muslin cut out the smoke flaps "HLMJ" and "IONK." "HJ" should measure five inches; "LM" four inches; "HL" two inches and "MJ" one inch. The same measurements apply to "IONK." Sew these flaps to the tepee cover so that "ML" fits on to "PE," and "NO" to "QG." In the corner of these smoke flaps at "H" and "I" sew three-cornered pieces for pockets for the ends of the two remaining poles. Sew a cord "ed" on the triangular piece "AFR" one inch from "A." From "P" to "V" make a double row of lacing holes, and do the same from "Q" to "W." These must correspond because they lace together in setting up the tepee as in Figure IV. Along "BU" and "XD" make similar lacing holes. Around the circular edge "BCD" sew ten small loops of small cord. Now the tepee cover is ready, just as it appears in Figure III, to place on the frame.

Tie the cord "ed" to one of the sticks at a point ten inches above the base. Draw "b" and "b'" and "c" and "c'" together and lace with wooden pins made of matches. Tie the cover to the hoop through the loops made at the lower edge. Thrust the ends of the two remaining sticks in the smoke flap pockets to regulate the opening. Make a flap for the circular doorway by hemming a piece of muslin to a wire or willow bent in the form of a horse-shoe and attach to a lacing pin by means of a string. Now the model of a tepee is complete. It is fine for a museum or exhibit, but one would have difficulty trying to camp in it. One could simplify this procedure by first making a pattern of the

the construction of the real tepee, except in cutting out the equilateral triangles at "A." In this real tepee make "AE"

six inches, "AF" and "EF" each one foot. The other triangle "ARC" is the same size. In a similar manner transpose all the dimensions from inches to feet before drawing the pattern on the canvas. The poles will be twelve feet long at least, the canvas of six or eight ounce material will be twenty feet long, and ten feet wide; "AB" and "AD" will each be ten feet, and so on. Canvas is sold by the yard, thirty-six to sixty inches wide. The strips should be sewed together to make a piece ten feet by twenty feet. The price of this amount of six or eight-ounce duck should

not exceed \$6.00. This is laid out perfectly flat and the pattern described by using charcoal or soft lead pencil. Proceed as follows: With "A" (the middle point of the long side) as a center and a cord ten feet long as a radius, describe the half circle "BCD." In cutting out this circle later on allow a little for a hem made about a clothes line or sash cord. This hem is in contact with the ground. It helps hold the covering in place and for obvious reasons must be strong, hence the cord. Next work out the equilateral triangles at "A" using dimensions given above. Now mark the semi-circles for the door, if you want this kind of a door, though it is not needed. Cut out along the dotted lines. From the scraps make the smoke flaps and sew to the cover as directed in making the model of a tepee. Two inches from "BP" make the double row of holes; first two pairs, then skipping two feet for an entrance, then above the entrance seven pairs more as shown in Figure IV. Hem the rope "BCD;" fasten a fifteen-inch rope at "B," one at "D," and ten other pieces at regular intervals along "BCD." Unless you wish to hem all edges, the cover is now complete.

Indians attached much importance to the erection of a new tepee. The (Continuing on page 430)

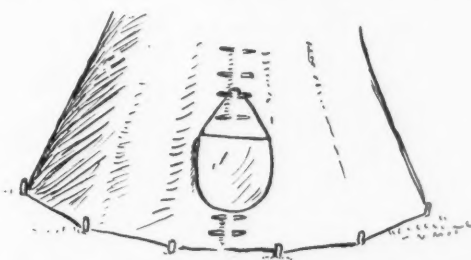


FIG. IV
HOW TO USE WOODEN PINS
IN LACING THE FRONT

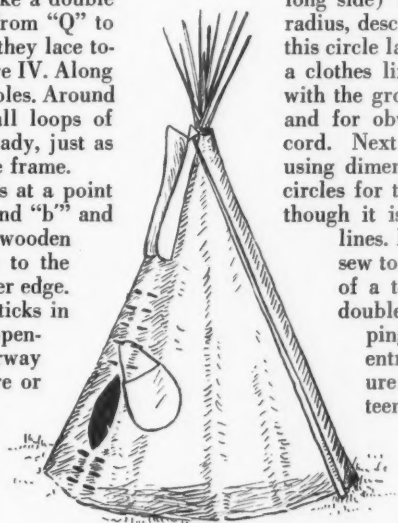


FIG. V
FINISHED MODEL OF A TEPEE

LODGEPOLE PINE

Pinus contorta - - Loudon



LODGEPOLE PINE has been referred to as the most common conifer of the Northern Rockies. It grows from sea level to elevations of 11,500 feet, extending from the Yukon River down the coast of Alaska and British Columbia, through Washington, Oregon and California, and most of the Rocky Mountain region. Along the seacoast and in the bogs of the far North, the tree is frequently gnarled and stunted so as to deserve the name "scrub pine." Doubtless, the technical name, *Pinus contorta*, refers to the twisted branches of the botanical type characteristic of the coast, which is also reflected in the local name, "screw pine." In parts of the Rocky Mountains where it grows with Douglas fir, Englemann spruce, alpine fir, and other trees, lodgepole pine is of commercial importance.

While commonly sixty to eighty feet high, it occasionally reaches 150 feet, and thirty to forty inches in diameter. Trees mature in about 140 years but may live to be 300 years old. It develops stands of more than 10,000 board feet to the acre. Ranking seventh among Western conifers, lodgepole pine stands are estimated to contain 43,276,000,000 board feet, of which more than half is in the southern and central Rocky Mountains. About two billion board feet are growing in the Pacific Coast region. The lumber cut for 1930 was reported as 30,401,000 board feet and was largely from Colorado and Wyoming.

Some botanists recognize the more upstanding tree of the high mountains as a distinct species, while others call it a variety of the shore pine. Accordingly, it may be referred to as *Pinus murrayana*, or *Pinus contorta* variety *murrayana*.

The needles or leaves are bright yellow-green, occur in pairs, range from one inch to three inches but average about two inches in length, and remain on the trees six to eight years.

Fertile cones are borne nearly every year after the trees are fifteen years old. Heavy seed crops occur at intervals of three or four years. The cones are glossy, light yellow-brown, three-quarters of an inch to two inches long, and often occur in clusters of a half dozen or more. Each thin scale is armed with a slender more or less recurved prickle. The cones ripen in August or September of the second season but may hang on the branches for years before opening and liberating their seed. Lodgepole pine seed have been known to show life after forty years.

In dense stands tall, clean, gradually tapering shafts with short rounded small-branched crowns are developed. Such shafts, five or six inches in

Lodgepole pine of the Rocky Mountains frequently grows in dense, even-aged stands, attaining a height of one hundred and fifty feet, with breast high diameter of three feet or more.

diameter, and flexible, were used by Indians to make their lodges or tepees, whence the name "lodgepole pine." Open stands result in dense rounded or pyramidal crowns of large, much-forked branches which may extend down to the ground.

The thin scaly bark of the trunk is pale brown with a grayish tinge, from half an inch to an inch thick, and irregularly divided by vertical and cross fissures into small oblong plates. The inner bark is prepared as food by the Indians of the Northwest and of Alaska. They also work it into baskets.

The wood is hard, stiff, somewhat brittle and straight grained. The heart wood is usually light brown, tinged with red, while the thick sapwood is nearly white. A pebbled appearance on some boards has led to the name "bird's eye pine." The wood from Coast trees is heavier, stronger and more dense than that from trees grown in the mountains, a cubic foot weighing about thirty-six pounds as compared with about twenty-five pounds for the mountain form. Lodgepole pine is used for railroad ties, construction lumber, fence and corral poles, house logs and fuel.

Although only native to the West, lodgepole pine has been successfully planted in various parts of the East. Specimens growing in the Arnold Arboretum, in Massachusetts, were planted about 1877 and others have been grown successfully at Letchworth Park in western New York since 1912 and 1914. Under natural conditions it avoids limestone soils and demands full sunlight for best growth.

Fire destroys large areas of valuable lodgepole timber, but at the same time it prepares ideal conditions for the seedlings by exposing the mineral soil, removing competing vegetation and killing or driving away the birds and rodents who would otherwise feed on the seed. In dense lodgepole stands fires quickly develop into disastrous crown blazes, which destroy everything in their path. Even surface fires quickly burn through the thin bark and severely damage the stands. The cone scales, however, insulate many of the seed against damage, yet open most readily in the presence of heat, so that a heavy distribution of seeds frequently follows after a fire. The resulting lodgepole seedlings grow quickly in the fire-cleaned area, producing a dense stand without competition from other kinds of trees. This accounts for the phoenix-like power of lodgepole pine to take possession of areas following fires.

Mistletoe distorts many lodgepole trees, causing them to have thin crowns, sickly, pale, short needles and slow growth. Trees badly covered with mistletoe should be cut and removed when practicable. Heart rot is caused by canker infections from several kinds of wood-destroying fungi.

Serious damage is done great areas of lodgepole pine by Western pine bark beetles, which bore under the bark and eventually girdle and kill the trees. Bark beetles can be controlled by peeling the bark from the trunk and stump of the tree and then burning it. Porcupines prove a lesser menace by gnawing off the bark from many trees.



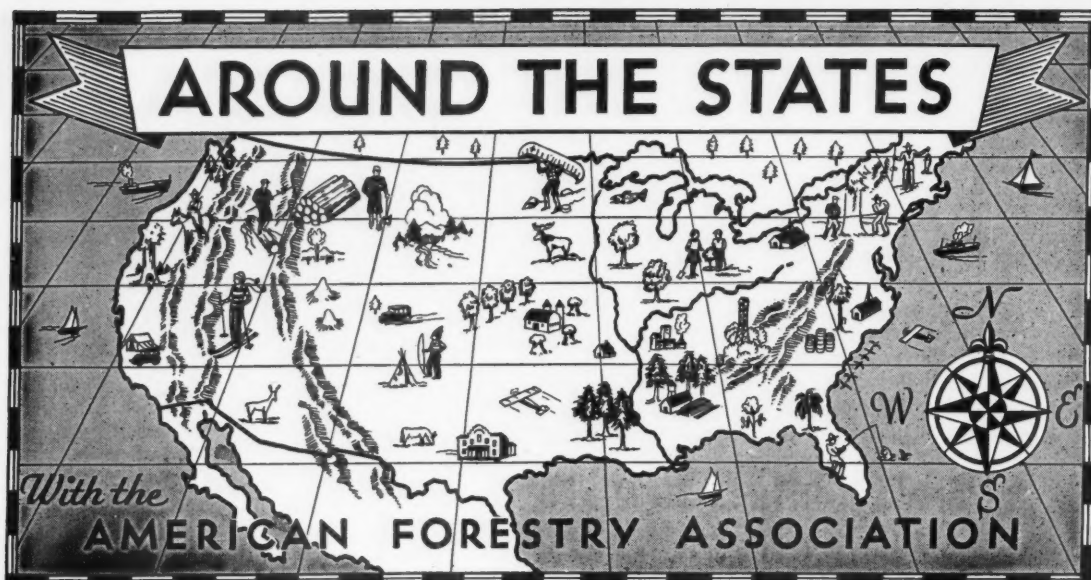
The bright yellow-green needles are about two inches long and borne in pairs. The cones range up to two inches long and may remain on the tree for years before releasing their seeds.



Natural range of lodgepole pine within the United States.



The pale brown bark of the main trunk is made up of many thin irregular scales and is seldom more than an inch thick.



Richards Appointed Tennessee Valley Forester

Edward C. M. Richards, of West Chester, Pennsylvania, was appointed Forester for the Tennessee Valley Authority on August 10. Mr. Richards will make his headquarters at Knoxville, Tennessee, but for the next several months will be largely in the field.

A graduate of Sheffield Scientific School at Yale and of the Yale Forest School with the class of 1911, Mr. Richards has served as consulting forester on properties throughout the eastern and southern states.

He spent much of 1917 to 1919 in Persia with the Near East Relief where he observed the age-long destructive influences of lumbering and unrestricted grazing. This was followed during 1930 and 1931 with travel to study forest activities in many of the countries of central Europe and in the British Isles.

As Forester for the Tennessee Valley Authority, Mr. Richards looks upon the entire project as a great sociological experiment in which forestry is basic. Without adequate forest management soils are exposed, excessive erosion follows, and the reservoirs upon which the production of power is dependent fill up with silt to the detriment of the whole program.

As an accompaniment to protection of the watershed, Mr. Richards expects that forestry will serve as a means of helping raise the standard of life of everyone in the Valley. An opportunity is offered the Forester to have remarkable control over a large tract of land to

the end that a coordinated plan may be worked out for its fullest use. Years hence, when the plan is completely operative, Mr. Richards envisions fully stocked forest stands within the Valley upon which will be practiced sustained yield forest management. Labor will have the sense of security that comes with permanent employment, timber will be removed without disturbing the watersheds, the Tennessee River and its tributaries will no longer be red with silt but clear. Meanwhile,

ferred in the Indian Service to the position of General Production Supervisor under the Emergency Conservation Act.

Mr. Marshall, who will be in charge of administration and conservation of nine million acres of forest land on fifty Indian reservations in thirteen states, has for nine years been actively associated with forestry work in the continental United States and Alaska. He is well known as a writer, two of his outstanding books being "The People's Forests,"

dealing with deterioration of American forests and a practical plan for their rehabilitation, and "Arctic Village," an account of the mixed white and Eskimo civilization in northern Alaska. He is also the author of the recreation sections of the United States Forest Service Report, "A National Plan for American Foresters." Mr. Marshall is a graduate of the New York State College of Forestry and holds the degree of Master of Forestry from Harvard University and the degree of Doctor of Philosophy from Johns Hopkins University. He is the



Edward C. M. Richards



Robert Marshall

the inhabitants of the Valley will be comfortably housed and have the use of adequate supplies of low-priced electricity encouraging the use of modern conveniences and comforts.

Marshall to Direct Forestry Work of Indian Service

Robert Marshall, of Baltimore, Maryland, was, on August 3, named Director of Forestry in the Indian Service, Department of Interior, to succeed J. P. Kinney who has been trans-

son of the late Louis Marshall, of New York, who, among his many public services, acted as attorney without fee for a number of Indian tribes. Mr. Marshall's appointment stresses the conviction on the part of Secretary Ickes and John Collier, Commissioner of Indian Affairs, that the Indians should play a more active role in management of their own timber operations. This policy, it was announced, means shifting control of Indian forests to the tribes under changed methods of governmental supervision.

Roosevelt Orders Arboretum Funds

By order of President Roosevelt \$171,638 has been allocated to the Department of Agriculture from National Industrial Recovery funds for the acquisition of lands for the National Arboretum in Washington, D. C. The new lands to be purchased will fill in gaps between previously acquired parcels, in order to make the arboretum large enough to go forward with actual development.

About 190 acres had been purchased before and about 400 acres of Government-owned land are being added by reclamation from the Anacostia flats. Thus, when the new lands are added, the total arboretum would amount to nearly 800 acres. It includes a widely varied landscape with two hills—Mount Hamilton and Hickey Hill—together with lowlands and reclaimed water front along the Eastern Branch of the Potomac.

The first project planned in the arboretum, it was predicted by Dr. Frederick V. Coville, acting director of the arboretum, will be the raising of rapid-growing timber trees, which it is hoped to produce there.

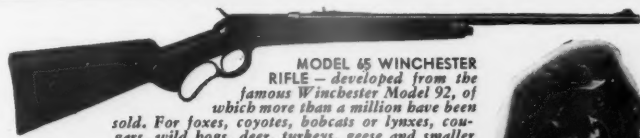
Oxholm New Lumber Chief

Axel H. Oxholm, until recently Secretary of the National Wood Utilization Committee, has been appointed Chief of the Lumber Division in the Bureau of Foreign and Domestic Commerce to succeed L. H. Peebles, who has been detailed as liaison officer between the National Recovery Administration and the Department of Commerce. The National Wood Utilization Committee was discontinued under the recent reorganization orders of the President. From 1916 to 1921 Mr. Oxholm was a trades commissioner with the Bureau of Foreign and Domestic Commerce.

Illegal Fences in Southwest Ordered Removed

Orders throwing open to public grazing thousands of acres of the Public Domain in Arizona and New Mexico, which have been illegally fenced during past years by large cattle interests, were issued by Secretary of the Interior Harold L. Ickes on July 18. This revokes orders of former Secretaries Work and Wilbur, and means that miles of illegally constructed fences in these States must be torn down.

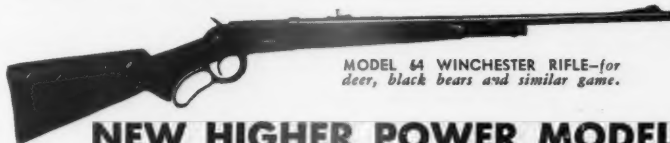
The Act of February 25, 1885, made the construction and maintenance of inclosures on the Public Domain a criminal offense punishable by fine or imprisonment, and transferred the early range fights between cattlemen, sheep herders and homesteaders to the courts. After the public lands in the North were cleared of illegal barriers the problem developed in the Southwest, and in 1917 while action was still under way the law was suspended. This was a war measure on the ground that fences save manpower and all able-bodied Americans were needed to serve with the forces in France. The suspension was continued after the close of the war by each of the succeeding Secretaries of the Interior. Responsibility for carrying out the orders of the Secretary has been placed with Louis R. Glavis, Director of Investigations in the Department of the Interior.



MODEL 65 WINCHESTER RIFLE—developed from the famous Winchester Model 92, of which more than a million have been sold. For foxes, coyotes, bobcats or lynxes, cougars, wild dogs, deer, turkeys, geese and smaller game and varmints.

FINE NEW RIFLE for Small and Medium Game

YOU will like this light, strong, safe, simple, dependable and accurate new Winchester. Greatly improved for quick, sure, vital hits on game on the jump. Same world famous Winchester excellence in materials, workmanship and shooting, now better than ever. And a beauty—without having any useless frills or fancy rigging. Solid frame with half magazine. Barrel 22 inches, round, tapered. Lyman gold bead front sight with ramp base. Specially designed stock of shotgun style with newly adopted pistol grip and new metal butt plate. With cartridge in chamber holds eight shots. For .25-20 or .32 Winchester center fire cartridges. Weight about 6½ lbs.



MODEL 64 WINCHESTER RIFLE—for deer, black bears and similar game.

NEW HIGHER POWER MODEL for Medium Game Animals

A STRONGER shooter and a half pound heavier than the new Model 65, this too is a fast rifle, for the fastest running deer, black bear, mountain sheep or caribou on four legs. It improves your shooting because it handles faster, fits you better, gives you a straighter trigger pull. The specially developed shotgun type stock, with new pistol grip, and the special new long ramp base under the Lyman gold bead front sight, are there for that purpose. And you will get all the speed, accuracy and power out of your ammunition, whichever of the Model 64's popular and serviceable calibers you choose.

Your Model 64 will be found far ahead of older style hunting rifles, not only for quick work but as well for the most careful shots, when you have plenty of time. Yet it, too, like the new Model 65 is free from all frills—beautifully simple.

Barrel 24 inches, round, tapered. Solid frame only. Two-thirds magazine—six shots, five in magazine and one in chamber. For .25-35, .30 (.30-30) Winchester or .32 Winchester Special center fire cartridges. Weight about 7 lbs.

Ask your dealer to show you your pick of these most up-to-date, fast-handling lever-action hunting rifles. Write for catalog—FREE.

WINCHESTER REPEATING ARMS CO.
NEW HAVEN Address Dept. 26-C CONN., U. S. A.



● Winchester Stayless non-mercuric or Western non-corrosive center fire cartridges will give you highest power and accuracy. They will not rust the bore of your rifle barrel, because their primers are positively non-rusting. Ask your dealer for them by name.

WINCHESTER
TRADE MARK

WORLD STANDARD
GUNS AND
AMMUNITION

IN THE

WIM



Salt Air—a tonic for rest or pleasure seekers. You'll find "Life" here a continuous round of things to do—glorious bathing in the surf—nightly supper dancing at the Beach Club.* There's also horseback riding—tennis—indoor salt pool—and two superb golf courses.

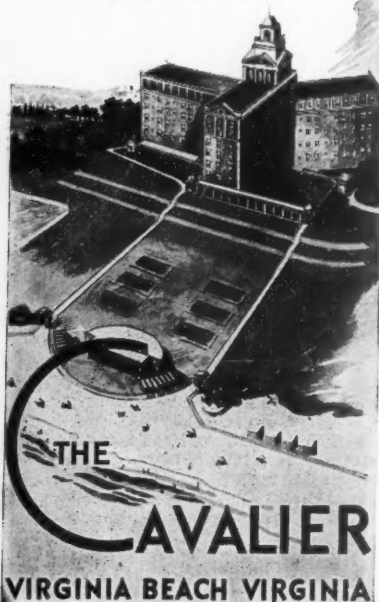
*Cavalier guests receive full privileges of the smart private Beach Club.

Write for illustrated booklet.

Sidney Banks, Managing Director

The CAVALIER

Virginia Beach, Va.



Conservation Camps to Feel Political Patronage

By G. H. COLLINGWOOD

Are the Emergency Conservation camps to be subject to political patronage or can they be maintained on an independent basis of personal ability as is the aim of the Tennessee Valley Project? Possibilities of the injection of the political spoils system were revealed in the *Washington Daily News* for August 3 in an article stating that "Mr. Farley's ubiquitous spoils system has just turned up in a new quarter—in the Civilian Conservation Corps reforestation camps." The *News* reports that the camps "will be placed under foremen selected because of the political chores they have performed," and continues, "The story comes out in an order signed by Agriculture Secretary Wallace. Apparently it was signed hesitatingly and under pressure from the chief patronage dispenser, because it was preceded by long negotiations. Wallace is known as a Civil Service advocate, and he was able to get some concessions. His order leaves with the Forest Service the authority it has had to select professional and technical men, such as foresters and pathologists for the camps.

"The C. C. C., one of the first emergency units to get organized, got away to a good start before Farley could perfect his personnel organization, and all he can gather there now are refills as vacancies occur. Of course, it may be possible to find a way to make vacancies, and there are intimations that the camps will be continued through the winter and next summer. That will give more time for the scheme to work out."

As signed by Secretary Wallace on July 22, the order states—"except as directed by the Secretary of Agriculture, no changes shall be made in the present organization of the work." Whether this gives permission to dismiss politically objectionable appointees now on the rolls as foremen or superintendents is a matter of conjecture, but there is no question regarding appointments to fill vacancies. This is covered as follows:

"Appointments to make replacements in the supervisory field positions shall be made upon the following basis:

"(a) For all positions which require professional or technical training, or skilled workers, selection and employment may be made without reference to the Secretary's office.

"(b) For all positions which require qualifications of an unskilled, non-technical and/or non-professional character, a list of qualified men available for the different camps, with a statement of their several qualifications, will be furnished through the Secretary's Special Assistant, Mr. Julian N. Friant, to the Forester, from which list selections shall be made to fill such vacancies as may occur. The Forester will furnish Mr. Friant with a description of the jobs in this class, with a statement of the required qualifications."

Mr. Friant is now receiving suggestions from Senators and Representatives with which to prepare a list of applicants who may be considered for positions as non-technical superintendents and foremen. The monthly salary of superintendents is \$167 to \$220, while that of foremen is \$120 to \$165. In all cases these figures are subject to 15 per cent deduction as required in the Economy Act, and a further deduction for the cost of board furnished by the Government.

In a recent conversation, Mr. Friant expressed his personal interest in forestry, his

admiration for the personnel of the United States Forest Service, and his great desire for the success of the Emergency Conservation Work. During his previous duties in Missouri with the National Drainage Association, he worked for national, as well as State legislation for agriculture and conservation.

According to Mr. Friant, camp superintendents and foremen on State and privately owned lands in several States were sometimes made on political bases and too often with Republican interests at heart. It is believed that some of these men would secretly rejoice if the plan were to fail. With this in mind, Mr. Friant declared with emphasis that no more men in any way out of sympathy with Mr. Roosevelt or his projects will be appointed to camp positions.

Mr. Friant declared the Secretary's order refers only to new appointments of a non-technical nature. The Forest Service has described the requirements of all of the jobs, and will continue to handle all technical appointments. Non-technical appointments will be based on the ability of the applicant to do the work, and his evidenced loyalty to Mr. Roosevelt's program. While previous political affiliations may count, the applicant must evidence a desire to help the Roosevelt program succeed.

There remains a question as to how the ruling will be administered. It places Forest Service officers on their guard more than ever before, for lists must be carefully scrutinized that only competent men are accepted. While principles of party loyalty need not require the inclusion of undesirable or incompetent men, these same principles can be invaluable to the success of any project. This is particularly true of an undertaking like the Civilian Conservation Corps, fraught through and through with human problems.

The fact that all Civilian Conservation Corps recruits have been signed up for six months, may complicate the situation. There is strong likelihood that they will be continued through the coming winter, in which case the men and their officers may be placed under new contracts. Whether the Secretary's order will apply to superintendents and foremen who will continue through the next period is a question which Mr. Friant declined to answer. Without doubt, however, each additional month will carry opportunities for replacements and advancements within the corps, on which the Secretary's order will apply.

There is also a question as to whether Mr. Friant may dismiss non-technical appointees who have evidenced their lack of sympathy with the administration. This would focus directly upon any Republican States where the Conservation Camps have been used as means for building up opposing political machines. These matters are troubling administrators of the Emergency Conservation camps and cause them to look with mingled envy and admiration upon the Tennessee Valley Authority whose administrator, Dr. Arthur E. Morgan, declared from the start that politics would not be permitted within his organization. In this, Dr. Morgan has the support of President Roosevelt, and the Tennessee Valley Authority is one of the few Government organizations having no representative on its rolls to care for political patronage.

Public Works Funds Allotted to Forestry and Conservation

Allocation to forest and conservation purposes of nearly \$80,000,000 of the \$3,300,000,000 for the Public Works program promises accomplishments of national importance which have long been held in abeyance. Apportionment to States of \$30,000,000 for the construction of roads through National Forests and public lands has been announced by Secretary Wallace of the Department of Agriculture. Fifteen million dollars was apportioned for National Forest highways, \$10,000,000 for National Forest roads, trails and related projects, and \$5,000,000 for roads through public lands. These amounts were allotted by the Federal Emergency Administration of Public Works from \$50,000,000 provided for roads in areas subject to Federal control under the National Industrial Recovery Act.

Of the remaining \$20,000,000, the National Park Service will receive \$16,000,000 for National Parks roads and trails, and the Indian Service \$4,000,000.

The Forest Service has been allotted \$15,982,745 to be used for the construction of fire breaks and fire lines throughout the National Forest System, for building lookout towers, telephone lines, ranger cabins and barns, for range improvements and timber stand improvements, for constructing and improving buildings and equipment on the public camp grounds where more than 30,000,000 people camp who annually visit the National Forests, for promoting an accelerated program of forest planting, for protecting nationally owned timber from the white pine blister rust, and for developing projects in connection with the Forest Products Laboratory.

White pine blister rust control will receive approximately \$4,000,000 including \$2,000,000 of the \$4,850,620 allotted to the Bureau of Plant Industry, and over \$2,000,000 of the public works funds allotted to the Forest Service for protection of timber on the National Forests. Much of the money from the Bureau of Plant Industry will be used for control in cooperation with private owners of white pine timber, and is in addition to Forest Service expenditures and the work being done by the Civilian Conservation Corps. The Dutch elm disease which has made repeated appearances in parts of New Jersey, as well as in Ohio, is allotted \$80,000. With this sum, representatives of the Bureau of Plant Industry hope to wipe out every trace of the elm disease from the country.

The soil erosion program has received \$5,000,000 from these funds, and the Coast and Geodetic Survey hopes to employ about 1,000 men in various parts of the country in the expenditure of \$2,600,000.

White Mountain Home Site Leases

No departure from the present Forest Service policy of not issuing leases for individual summer home sites on the White Mountain National Forest is contemplated, according to a statement from Chief Forester R. Y. Stuart to Philip W. Ayres, Secretary-Forester of the Society for the Protection of New Hampshire Forests.

This assurance came as a result of inquiries regarding the results of the study now being made of the recreational opportunities on that forest.

BUILD THE . . .

54,500 Miles of Roads and Trails

8,537 Miles of Forest Telegraph Lines

3,600 Forest Highways

11,700 Range Fences

900 Fire Breaks

WITH **Quikwerk** TOOLS

- Ideally adapted for trail or road building, flood control, clearing, planting, grading and all other work planned for the Civilian Conservation Corps, thousands of Quikwerk Tools are already in use in State, National and privately owned forests.
- Emergency shipments—made from our spacious and well-filled storerooms—have enabled many projects to get under way in scheduled time.
- Perfectly balanced, these famous tools will deliver a maximum of satisfactory service without danger of failure.
- Order Quikwerk Tools with entire confidence. They comply with your three requirements—*adaptability, prompt shipment, satisfactory service*. Write today for a copy of our illustrated catalog, for printed instructions as to the correct use of our tools in forestry work, and for quotations on your tool requirements.

BARS
●
HOES
●
PICKS
●
MAULS
●
WEDGES
●
SLEDGES
●
HAMMERS
●
MATTOCKS
●
Send for our complete catalog.

WARREN TOOL CORPORATION

GENERAL OFFICES - - - WARREN, OHIO



SEED

FOR
FOREST & NURSERY

HERBST BROTHERS, INC.

TREE AND SHRUB SEED SPECIALISTS

92 WARREN ST. NEW YORK, N. Y.



WHY NOT RUN AWAY TO SEA?



How would you like to wake up some morning soon . . . stroll over to your window and find the sun streaming down on the ocean below you?

A breakfast to talk about. . . Then, what shall it be? A lazy morning on the glorious beach? . . . A fishing excursion far out to sea? Golf on a nearby course? Or, perhaps, just a pleasant day on the Ocean Decks watching the gay movement of the Boardwalk.

Whatever you like, you'll find that the Chalfonte-Haddon Hall formula for a holiday will put you in happy accord with the world. Economical rates. Write for them. American and European Plans. Bathing right from the hotels. Garage.

CHALFONTE- HADDON HALL

ATLANTIC CITY

Leeds and Lippincott Company



Plans Shaping to Continue Emergency Forestry Work Through Winter

With the full quota of more than 314,000 men now at work in the forests, Robert Fechner, Director of Emergency Conservation Work, announced early in August that plans were shaping for the continuation of the Civilian Conservation Corps work camps throughout the winter. Plans were submitted to President Roosevelt upon his return to Washington in August. This means that in regions of moderate climate there will be no break in the forest activities, while the men now working in more severe climates will be transferred to the southern and southwestern states.

At the end of the six month enrollment period in November, members of the Corps will have the privilege of seeking employment elsewhere if they so desire. It is not planned to enroll new members. The cost during this first period will amount to about one hundred and twenty-five million dollars, but authorities estimate the same number of men can be maintained another six months for sixty-five million dollars.

While plans are being laid for their immediate future, the greatest forestry army ever assembled in this or any other country is operating on far-flung battle fronts. Throughout the breadth of the country Government, State and private agencies have launched the most intensive campaign in the nation's history to reduce the huge annual losses caused by destructive forest fires, tree attacking insects and tree diseases. At the same time a great army has been sent to battle against destructive soil erosion. Still another force is engaged in forest improvement work which includes tree planting, the thinning out of undesirable trees, the construction of truck and horse trails, and the development of recreation camps.

To carry this battle to a successful conclusion the men of the Civilian Conservation Corps will construct 50,000 miles of truck and horse trails in the forests, a task equal to building a trail long enough to girdle the globe almost twice. They will construct 12,000 miles of telephone line and build a minimum of 4,000 miles of fire breaks. More than 5,000,000 acres of forest land will be improved through thinning, clearing and other means. Trees will be planted on a minimum of 300,000 acres, while fire hazards will be removed from hundreds of thousands of acres. A vigorous campaign will be launched against tree diseases and insects on 10,000,000 acres, while on 6,000,000 acres the battle will be carried against destructive rodents.

The white pine blister rust was termed the most serious tree disease now threatening the forest resources of the nation. It has spread throughout the commercial range of western white pine, through northern Idaho and western Montana. Thousands of Emergency Forest workers are operating in this region, digging out gooseberry and currant bushes, carriers of the disease.

With the forest fire season at its height in

the West an emergency fire-fighting organization has been set up in the Corps. Small groups of men undergo daily training by forest officers and in many regions have performed invaluable service. From Arizona comes a report that the men from Hart Canyon Camp, on the Sitgraves National Forest, were confronted by eight lightning fires at one time and under perfect organization turned in a spectacular job of suppression and mopping up. In southern California a large brush fire threatened a camp on the Cleveland National Forest. The enrolled men took care of the situation with "promptness and dispatch."

The purchase of supplies and equipment for the Civilian Conservation Corps has proved a boom to business and industry in all sections of the nation, according to Mr. Fechner. Reports on purchases up to August 1 disclosed that millions of dollars had been injected into business and industrial channels through the purchase of clothing, food, housing supplies, trucks, tractors, and other mechanical equipment utilized in carrying on forest improvements and forest protection activities.

To take care of the transportation needs of the camps and the forest work more than 12,500 trucks of various sizes have been purchased, together with 300 passenger cars and 300 motor ambulances. In addition automotive manufacturers have been given orders for the construction of 227 trail builders, 216 tractors, sixty-five graders, and twenty-four compressors. Among other construction supplies which the manufacturers have been called upon to furnish are 100,000 axes, 152,000 shovels, 152,000 wedges, 114,000 mattocks, 114,000 picks, 60,000 saws, 100,000 hammers, 40,000 crowbars, 30,000 chisels, 15,000 brush hooks, 15,000 canthooks, 70,000 canteens, 60,000 files, 633,000 feet of rope, 12,000 grindstones, 2,500 blasting machines, 2,000 wheelbarrows, and 6,300 wrecking bars.

Added to this the camp authorities have ordered a minimum of 200 tons of dynamite, 30,000 ounces strychnine for conducting campaigns against rodents, 572,000 pounds of oats, 250,000 pounds of cement, 100,000 feet of blasting fuse, 3,000 gallons of paint, and several hundred miles of telephone wire.

To equip the men and care for their welfare in camp there has been purchased a million pairs of cotton socks, a million pairs of wool socks, 500,000 pairs of shoes, 784,000 suits of summer underwear, 1,000,000 pairs of denim jumpers, 200,000 raincoats, 625,000 shirts, 1,000,000 summer undershirts, 48,000 pairs of rubber boots, 12,000 tents, 1,000,000 towels, and many other articles.

At the present time there is a market for food supplies to feed more than 300,000 men daily. About fifty per cent of the purchases are made locally in the vicinity of the camp.

National Forest Receipts Gain

Receipts from sales of forest products, grazing permits, and other uses in the National Forests for the fiscal year ended June 30, 1933, amounted to \$2,627,599, a gain of \$333,351 over 1932, the United States Forest Service has announced.

Grazing fees formed the largest item of National Forest income for the year, amounting to \$1,498,198, an increase of \$668,238 over 1932, when grazing permittees were operating under a fifty per cent reduction from the grazing rates of 1931. This apparent increase, however, is the result of one-half the amount due for the calendar year being paid before the close of the fiscal year 1933, and

is not expected to be maintained this fall owing to substantial reductions in grazing fees made by the Secretary of Agriculture as a measure of relief for the stock raising industry.

Although the year as a whole shows a decline in timber sales from \$1,023,777 for 1932 to \$758,307, for 1933, a substantial increase in receipts from this source occurred in the last quarter. Timber sales for this (April-June) period amounted to \$253,101, a gain of \$86,435 over the corresponding period in 1932. Seven of the nine forest regions showed gains. Alaska and California had nominal declines.

When Writing Advertisers—Mention AMERICAN FORESTS

Ask the Forester?

Forestry Questions Submitted to The American Forestry Association, 1727 K St., N. W., Washington, D. C., Will be Answered in this Column. A Self-Addressed Stamped Envelope Accompanying Your Letter will Assure a Reply.

QUESTION: How much more water does a forest soil absorb than the soil of an open field?—K. E. S., Georgia.

ANSWER: Dr. J. T. Auten of the Central States Forest Experiment Station at Columbus, Ohio, found that the top inch of forest soil in a normal, protected woods absorbs forty-seven times as much moisture as the top inch in an abandoned field; the third inch in depth in the woods absorbs fifteen times as much, and the eighth inch two and a half times as much as soil at the same depths absorb in an old field.

QUESTION: I am making a collection of tree leaves, and have been looking around for an herbarium. I would greatly appreciate it if you would inform me as to where I could purchase one and about what the price would be.—D. C., Arizona.

ANSWER: The making of an herbarium is usually a personal or professional project and this office knows of no one who is in the business of making and selling them. Occasionally, one may trade specimens of tree leaves with collectors in other parts of the country. It is suggested that you get in touch with botanists in the University of Arizona and others interested in trees.

QUESTION: How many emergency work camps are located in Michigan? Can they be visited and what work are the men doing?—M. C. L., Michigan.

ANSWER: There are 58 camps of about 200 men each in Michigan, of which fourteen were located on the four National Forests. Camps are all open to visitors, who must conform to the rules of the officer in charge.

The men are doing a variety of work ranging from road and trail construction, clearing fire breaks, improvement cuttings in forest stands, and the building of cabins and lookout towers. By September they plan to start a large forest planting program.

QUESTION: Is it customary for banks, in making appraisals of farms for loans, to take into account the stumpage value of the timber?—J. B. C., New York.

ANSWER: While loans are not made specifically on timber values, the Federal Farm Loan Bank of Springfield, Massachusetts, has for many years based its loans upon appraisals of all farm woods, together with other farm assets.

QUESTION: How much of the total virgin timber land of California is within the National Forests of the California region, and who owns the remaining virgin timber lands in the State?—H. E. S., California.

ANSWER: About 9,564,000 acres of virgin timber land is in National Forests, some 100,000 acres are owned by the State and muni-

cipalities, 3,996,000 acres are owned by individuals and companies, and 840,000 acres are in National Parks.

QUESTION: Does the government intend to continue the work of the Civilian Conservation Corps over the period of six months? If so, how long?—A. R. B., Maryland.

ANSWER: The law authorizing the Emergency Conservation Work was signed on March 31, 1933, and gives legal permission to continue the activities of the Civilian Conservation Corps for two years. At present, however, all plans, contracts, etc., are made on a six months basis, with no definite plans beyond that period.

QUESTION: Is it compulsory to send five-sixths of one's income in the Civilian Conservation Corps to one's family?—A. R. B., Maryland.

ANSWER: There is no requirement in the basic Act with regard to the disposal of the income of the enrolled men. However, the President has initiated a policy of enrolling only those who have dependents and requiring that approximately five-sixths of their income be returned to their family.

QUESTION: How can I control bag worms which are attacking my spruce and ornamental shrubs?

ANSWER: The Bureau of Entomology in the Department of Agriculture recommends that the entire tree including bark and leaves be sprayed with a lead arsenate solution, of four teaspoonfuls of prepared paste to a gallon of soapy water. The soap helps adhere the poison spray to the leaves. It is also suggested that neighboring plants and shrubs be sprayed with the same material.

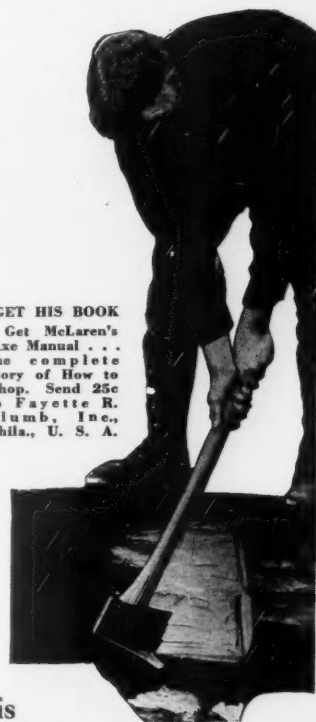
Discussion in early issues of AMERICAN FORESTS regarding attacks of bronze birch borer in white birch trees brings out the following recommendations for treatment by Hubert S. Spurr, of Wellesley, Massachusetts.

"Prune infected white birches thoroughly. If the wounds are large, make a drainage at the bottom of wound in form of a V. Put a heal collar of grafting wax on the edge of the live cambium bark. Creosote or paint the heart and sap-wood with a good tree paint. Spray infected trees at least twice during the summer with Bordeaux Black Leaf 40 and arsenate of lead according to the following formula: Bordeaux mixture, 16 pounds; Black Leaf 40, 1 pint; arsenate of lead, 6 pounds; water, 100 gallons. Spray during May and the last week of June. Fertilize infected trees with a good grade of bone meal in the early springtime. This spray will control leaf miners and defoliators, also tree borers. It is exceptionally good for the locust borer."

When Writing Advertisers—Mention AMERICAN FORESTS

GET HIS BOOK

Get McLaren's Axe Manual . . . the complete story of How to Chop. Send 25c to Fayette R. Plumb, Inc., Phila., U. S. A.



This Champion says—

"The Plumb Axe
is often my
margin of victory"

"IN many a close contest, my title has been saved by the Plumb Axe. That extra speed, that one second it saves me in every five, has meant the difference between victory and defeat," says Peter McLaren, America's Champion Chopper.

You may never have to chop against a stopwatch, but you do want to chop the easiest, quickest way; you do want to get rid of constant grinding.

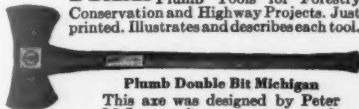
Get a Plumb and see how different an axe can be. It almost guides itself, so perfect is its balance.

That razor-keen edge bites deep. And you don't tug and pull to get it out after every blow; tapered blade throws the chip; clears itself in the cut.

You can depend upon the Plumb name—on Plumb Axes, Sledges, Wedges and Mails.

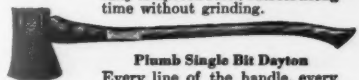
FAYETTE R. PLUMB, Inc., Phila., U. S. A.

FREE Write for your free catalog of Plumb Tools for Forestry Conservation and Highway Projects. Just printed. Illustrates and describes each tool.



Plumb Double Bit Michigan

This axe was designed by Peter McLaren, after numerous consultations with choppers in all parts of the country. Its keen edge, of carefully tempered steel, cuts for a long time without grinding.



Plumb Single Bit Dayton

Every line of the handle, every ounce of weight in the head of this axe is worked out to give that perfect balance so necessary to the axe user.

Leica Round the World with Wiley Post



"I selected the Leica as the only camera to carry on my round-the-world flight because it ideally combines so many important advantages. The one camera I could depend upon for a complete photographic record."—WILEY POST

New Model F Leica now

offers Greatest Range of Shutter Speeds in any Camera

For the first time—a camera with a focal plane shutter with speeds of 1, $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$ seconds and intermediate speeds, in addition to the regular speeds between 1/20th and 1/500th second. Instantly set, no confusing scales to adjust. Scope of shutter performance unequalled by any camera today. Other LEICA Features: Built-in Range Finder, giving you correct focus instantly, no guess-work, with Magnified Focusing Image for clear vision. 8 Interchangeable Lenses, including telephoto, speed, wide angle lenses, others. Over 300 accessories for every photographic need. 36 pictures from one roll of cinema film. Sharp Negatives (Enlargements up to 12x18 inches). Small, compact, fits the pocket. Write for free booklet, "Why LEICA?" and Booklet No. 1216, "LEICA MODEL F."

E. LEITZ, INC., DEPT. 367
60 EAST 10TH ST., NEW YORK

**A FOREST SAVED
IS A FOREST RAISED**

Lumber Code Approval Assures Forest Management Conference

The costs of timber protection and timber conservation will be clearly recognized as costs of timber production in the lumber code as approved by President Roosevelt on August 19. This is substantially the same as submitted to General Hugh Johnson, Director of the National Recovery Administration, by the Lumber Code Authority. Article X dealing with forest conservation is substantially the same as reported in AMERICAN FORESTS for August.

Immediately following the President's approval the Secretary of Agriculture was requested by the lumber industry to call a conference some time between October 10 and 20, in accordance with the provisions in Article X. A meeting to complete the plans may possibly be called for December 10. In requesting the conference, Dr. Wilson Compton, Secretary of the National Lumber Manufacturers Association, expressed the hope that Secretary Wallace will act as chairman and that he will designate Dean Henry S. Graves as Vice Chairman. The conference will consider ways and means of establishing timber cutting and silvicultural measures, timber taxation reform, forest protection, financial credit for the industry, research and public education, as well as means of enforcing the standards created under the code. It will be attended by approximately twelve representatives of the industries, together with representatives of public and other agencies designated by the Secretary of Agriculture. Dr. Compton suggested that these include among others, representatives of the United States Forest Service, the State Foresters, Society of American Foresters, American Forestry Association, American Tree Association, and the Chamber of Commerce of the United States.

One change in the code, suggested by Chief Forester R. Y. Stuart, with the approval of Secretary Wallace of the Department of Agriculture, and accepted by Dr. Compton for the forest industries is expected to add strength to the principle of conservation. This consists in substituting the words "bring

about" in Article I stating the purpose of the lumber code, for "encourage" in the phrase "to conserve forest resources and encourage the sustained production thereof." Conservation and reforestation were further woven into the code as recognized costs in the production of lumber.

Article X as approved by President Roosevelt reads:—

"The applicant industries undertake, in cooperation with public and other agencies, to carry out such practicable measures as may be necessary for the declared purposes of this Code in respect of conservation and sustained production of forest resources. The applicant industries shall forthwith request a conference with the Secretary of Agriculture and such State and other public and other agencies as he may designate. Said conference shall be requested to make to the Secretary of Agriculture recommendations of public measures, with the request that he transmit them, with his recommendations, to the President; and to make recommendations for industrial action to the Authority, which shall promptly take such action, and shall submit to the President such supplements to this Code, as it determines to be necessary and feasible to give effect to said declared purposes. Such supplements shall provide for the initiation and administration of said measures necessary for the conservation and sustained production of forest resources, by the industries within each Division, in cooperation with the appropriate State and Federal authorities. To the extent that said conference may determine that said measures require the cooperation of federal, state or other public agencies, said measures may to that extent be made contingent upon such cooperation of public agencies."

Dr. Compton opening the hearings on July 20, before Deputy Administrator Dudley Cates pointed to the perilous economic condition of the lumber industry. After remarking that national lumber consumption during the past five years has fallen from thirty-seven billion feet to less than twelve billion feet, and that wages to labor represent a substantially greater percentage of the price which the public pays for lumber than for many other materials, Dr. Compton added: "Our industries cannot pay higher labor costs without, concurrently, the increased means, through higher prices or more trade, of paying them. But prices sufficient to pay more wages cannot be established in the market merely because we so decree. They can be established only, if and as the public can pay." He estimated that the proposed wage and labor schedules would, when in full effect, add 131,000 men to the industry's pay rolls, including 57,000 in the South and 74,000 in the West, North and East.

Colonel W. B. Greeley, Secretary-Manager of the West Coast Lumbermen's Association, presented figures showing that many western mills are now operating at a loss. This will be increased under the wage scales set up in the proposed code without substantial increases in demand for lumber. The opinion widely prevails among timber owners, continued Colonel Greeley, that future increases in stumpage values will not recover the steady accumulation of taxes and other carrying costs. The tremendous investment in standing timber seeking liquidation has brought about pressure for the conversion of stumpage into lumber. This has resulted in the construction of logging and manufacturing facilities far in excess of the demand for lumber even in the most favorable years, and the current use of installed capacity of equipment



ATTENTION!

WE are rather proud of the fact that we have had the privilege of supplying the Government Civilian Conservation Camps with many thousand INDIAN FIRE PUMPS for use in combating forest, grass, brush and field fires. These pumps are giving highly satisfactory service. Can't we supply you too?

D. B. SMITH & CO., 405 MAIN STREET, UTICA, N. Y.

Manufacturers of

The Smith
INDIAN
Fire Pump



WRITE FOR DETAILS AND PRICES

When Writing Advertisers—Mention AMERICAN FORESTS

for lumber production exceeding current market requirements. The West Coast industry has, therefore, been in an almost chronic state of over-production, with demoralizing effects upon markets, prices and the stability of employment. The stabilization of the industry, Colonel Greeley held, is impossible without control of the current volume of production, and reasonable control of minimum prices.

President C. C. Sheppard of the National Lumber Manufacturers Association, expressed grave doubt as to whether the southern industry could stand the burden of a twenty-two and one-half cents an hour minimum wage rate, which is about twice the present rate, although about what it was in 1929. The weekly hour schedule of forty-eight hours was, he said, a twenty per cent reduction from present weekly hours. He estimated that these changes would increase employment in the Southern mills by 57,000 men, and the new wage scale would add \$2,664,000 to the Southern pine lumber payroll for the month of August. Speaking for the industry, Mr. Sheppard declared their willingness to undertake the burden of increased wages and reduced hours in the hope that it will help accomplish the results for which the National Recovery Administration was created.

Jackson Hole Inquiry

The future of famous Jackson Hole, in Wyoming, probably hinges upon a congressional investigation which opened there August 7. The issue at stake is the preservation of the "200,000 acre paradise" as an extension to Yellowstone National Park, versus the economic interests of the homesteaders and ranchers who own the land. The United States Senate Committee investigating the situation, which has been acute for a number of years, is headed by Senator Gerald P. Nye, of North Dakota.

Summoned to testify was John D. Rockefeller, Jr., whose plan of making Jackson Hole an extension of Yellowstone Park

aroused the opposition of a group of Wyoming residents, among them Senator Robert D. Carey. Rockefeller offered to purchase for more than \$1,000,000 the approximately 40,000 acres of deeded ground in the Jackson Hole region and give it to the Federal Government if the remaining public lands, about 200,000 acres, are joined with it and dedicated as a primitive wilderness area.

Smoky Mountain National Park Land Purchases Assured

An allotment of \$1,550,000 from Emergency Conservation Funds for the purchase of lands within the boundaries of the proposed Smoky Mountain National Park is believed by officers of the National Park Service to assure its early completion. This money was made available by Executive Order signed by President Roosevelt on July 28. It will be used in connection with funds still available from the states and from the original \$5,000,000 gift from Mr. Rockefeller to buy the remaining 120,000 acres necessary to complete the original objective of 455,000 acres for the National Park.

Subsistence Farm Project Organized

The "back to the land" movement, to settle families of unemployed upon "subsistence farms," for which \$25,000,000 is provided in the National Recovery Act, will be administered by M. L. Wilson, former head of the Agricultural Economics Department of the Montana State College of Agriculture, according to an announcement on August 10 by Secretary Ickes, of the Department of the Interior, and Public Works Administrator. Mr. Wilson is now directing the campaign for reduction of wheat acreage and will assume his new duties October 1.

Waterproof LEATHER GARMENTS



BREECHES
Unlined or lined;
big roomy pockets;
laced calf or
new puttee wrap;
also full legged
pants.



SHIRT
Large pockets;
zipper front;
light weight;
soft and pliable;
unlined.

Here, at last, is a leather that meets every outdoor requirement. It is guaranteed absolutely waterproof—extremely light—and remains soft and pliable no matter how many times it gets wet. Has withstood severest outdoor tests; not a new experiment. Unlined breeches are comfortably cool in summer. However, when lined, are fitted for the coldest weather. Will not scuff or tear. Catches no burrs or briars. Ideal for woodsman, ranger and hunter. Dull, olive drab color with weather-beaten appearance. Will last a lifetime. Complete outfit including coat, breeches, shirt made to order. Write for free catalog and price list.

BERLIN GLOVE CO.
DEPT. AF BERLIN, WISCONSIN

TROUTDALE CABINS

A secluded Northern Maine camp, 8 miles down Lake Umbagog, a beautiful mountain lake, elevation 1,000 feet. Close to the Appalachian Trail. Log cabins with bath, heat and electricity. Central dining hall. Our own garden. Fresh milk. Excellent cuisine. Short pack trips. 6 lakes to fish. In the heart of the deer, bear and partridge section.
Reasonable Rates — Booklet
TROUTDALE, MAINE

YOU ARE INVITED TO VISIT THIS NURSERY ON YOUR WAY HOME FROM THE FORESTRY MEETINGS AT FRANCONIA



ON ROUTE 18, 60 MILES FROM FRANCONIA

WESTERN MAINE FOREST NURSERY, FRYEBURG, MAINE

OUR TREES GUARANTEED TO LIVE

When Writing Advertisers—Mention AMERICAN FORESTS



An Announcement

Fechheimer takes this opportunity to express its thanks to the men in the U. S. Forestry Service for their valued patronage.



During July we sold more Forestry Uniforms than any two months in our history.

The Reforestation Program and Fechheimer quality did it.

You, too, should enjoy our guaranteed satisfaction.

Detailed information, samples and descriptive illustrations on made-to-measure uniforms, ready-made work clothing, Cruiser jackets, mackinaws and blouses are yours for the asking.

Write Us—No Obligation!

The Fechheimer Bros. Co.
Uniforms for Over 45 Years
4th & Pike Cincinnati, Ohio

BEST FISHING



SEPT. AND EARLY OCT. FOR CHANNEL BASS
BEST SPORTSMEN & FAMILY RESORT

A1 Hotel, Home Comforts, Best Va. Cooking, A.P. \$3, \$3.50, \$4 best rooms and bath, all include boat lunches. 25 sq. miles inland. 3 inlets and Ocean Fishing. Surf Bathing. Movies, Golf, Bowling (free Pool). Blues, Trout or Weak, Croakers, Sea Bass, Kings, etc. "Good boats and guides cheap."

Hotel Wachapreague, (Ocean Side), E. Shore, Va.
Del-Mar-Va. Concrete & Express Booklets
A. H. G. MEARS, Prop. Wachapreague, Va.

Professor John Bentley Dies

John Bentley, Jr., professor of forest engineering at Cornell University, died July 27 after a year's illness. Professor Bentley joined Cornell's faculty as assistant professor of forestry in 1911, leaving a post in the United States Forest Service. He was promoted to the full professorship in 1918.

Born in Brooklyn June 8, 1880, Professor Bentley was educated at Adelphi Academy in Brooklyn, and was graduated from Wesleyan in 1904. He took the degree of Master of Forestry at the Yale Forest School in 1907. That same year he became associated with the Ritter Lumber Company of North Carolina. He joined the United States Forest Service in 1908.

Rainy Lake Hearings in October

The postponed hearings on proposals to change the levels of Rainy Lake and other waters in northern Minnesota, and southern Manitoba, by building dams and developing water power, have been called by the Secretaries of the International Joint Commission for October 5, in the Legislative Chambers, Winnipeg, and on October 9 in the Curtis Hotel, Minneapolis. All interested persons are entitled to be heard, or to file statements on these dates.

Similar hearings, scheduled for late June, which promised to conclude the nine year controversy over damming lakes and streams of northern Minnesota, as proposed by the E. W. Backus interests and opposed by many conservationists, were postponed due to the death of former Senator Porter J. McCumber, of North Dakota, a member of the Commission. This vacancy has since been filled by the appointment of Eugene Lorton, of Tulsa, Oklahoma, publisher of the *Tulsa World* and a former resident of the Northwest. Other American members of the Commission are A. O. Stanley, Henderson, Kentucky, and John H. Bartlett, Portsmouth, New Hampshire.

Cox Hits Politics in Minnesota Conservation

Addressing a state-wide meeting of Minnesota conservationists at St. Paul late in July, William T. Cox, former Conservation Commissioner, accused "a few Minnesota politicians of kidnapping the conservation movement of the State." Mr. Cox was recently dismissed by the State Conservation Commission on twenty-nine charges, among them that of lacking executive ability.

"These kidnappers are still at large," Mr. Cox told the gathering, held to form a permanent Minnesota Conservation Council. "They are boasting of their achievement and daring conservationists to make a counter attack."

For two years, Mr. Cox said, the natural resources of Minnesota have been jeopardized in the interest of politics. "There has always been a measure of political interference with conservation work," he said, "but never before in this State or elsewhere in the country or even in South America have I seen the public interest so completely subverted to political advantage."

"We might as well recognize the fact that Governor Olsen is the Conservation Commission and the Conservation Department at the present time. He is responsible for the present situation. If he continues to shout for conservation and at the same time use it only for political purposes we shall know what to do at the proper time."

THE PIONEER TRAIL RIDERS

(Continued from page 404)

and their protection force.

Then came a day of rest. Mr. Thomson with a number of others followed the fishing stream. "Decided to try a grasshopper on a small trout spinner," he put down. "Dropped it close into the water and it was only a second before I saw a big fellow come up out of the shadows and pick him off. I fed him four more, all nice fat hoppers, before I hooked him. He gave me a battle royal for five minutes and then Bert Brown came along and tried to help me take him in. I brought him in close, but no sooner had Bert touched him than 'swish'—he was gone."

On around Big Salmon Lake, five miles long, and fishing good. Five Dolly Varden trout of exceptional size were caught. Many of the party followed a favorite sport of swimming. All were on hand for a dinner of "trout, potatoes, tomatoes, beans, bread and butter, strawberry jam, apricots and coffee. A wilderness camp was made on Tango Creek."

And then the greatest climb of the entire trip—"up to 10,000 feet elevation over Holland Peak and through Gordon Pass," Mr. Hornaday pictures, "out to the most spectacular view of the entire trip—a sheer drop down the mountain side with a marvelous view of Holland and Lindbergh Lakes."

Then the end of the trail—back to civilization. But not before a night at Captain Laird's Lodge, one of the most picturesque ranches in the Northwest.

And as the pioneer trip of the Trail Riders of the National Forests becomes history, as the story of fascinating days and nights on the wilderness trail is being recited by those who lived them, another party of Trail Riders is venturing deep into the romantic Sun River Wilderness of the Lewis and Clark National Forest. The riders left Helena, Montana, on August 16.

NEW HYBRID NUT TREES

Nut trees make good shade trees; are free from disease; grow rapidly; *bear freely*. Nut trees return profits in fruits and pleasure to owners of small grounds and large estates.

Hybrid Walnuts

Richly flavored meat easily picked from the thin shell. Trees are hardy into Canada. Generally bear the fourth year after planting. These two sorts lead the Black varieties—*Stabler*. Thin shell; meat removed in one piece. Ornamental, spreading tree. *Thomas*. Rapid growing. Worth planting everywhere.

Wiltz-Mayotte. Best English Walnut. Extra thin shell; tree rapid grower, free bearer.

Chestnuts that Resist Blight

Chinese Chestnuts (blight-resistant) must replace the American Variety. Hardy, bear freely, and are desirable ornamental trees.

These Nut Trees can be supplied in sizes from 4 ft. to 12 ft. high, and at prices that will permit liberal planting on large or small estates. Write for complete list.

Deciduous and Evergreens seedlings and transplants for forestry planting can be supplied in any quantity. Write for special quotations on the items and quantity needed.

KELSEY NURSERY SERVICE,

50 Church St., New York

Hybrid Hickories

Never can we lose the taste for Hickory nuts, but these new Hybrid sorts can't be compared to the old natives—they are so much better.

McAllister has a thin shell, is over 2 inches long, with plump kernel.

Burlington. Similar to the pecan in form. Tree hardy even into Minnesota.

Pecans for the North

Busseron and *Butterick* are the best. They originated in Indiana and Illinois, and are hardy in the North. Each variety should be planted so they will cross-fertilize.

Book Reviews

FORESTRY: AN ECONOMIC CHALLENGE, by Arthur Newton Pack. Published by The Macmillan Company, New York. 161 pages. Price \$1.25.

The idea of presenting forestry as a challenge is not new, but Mr. Pack has submitted questions, supported by facts and opinions, which promise to be thought provoking to foresters, conservationists, and others interested in America's forest and land problems. "Forestry: An Economic Challenge" carries a message for too trusting followers of an ideal, as well as for the proverbial "doubting Thomases."

This book will not meet with whole-hearted approval among foresters but it will undoubtedly be a subject of many fruitful discussions. Declaring that until forest devastation is stopped, forestry itself has not succeeded, the author may find those who can not agree with him when he says, "We have not yet any national policy. We drift. There is a lack of leadership; a lack of unity among foresters, and, worst of all, a lack of national planning sufficiently comprehensive even to suggest any definite remedy." This is written with full recognition and knowledge of the Copeland Report, and of the cooperative work undertaken and carried on under the Clarke-McNary Act, which Mr. Pack declares has largely failed to accomplish the things for which it was created.

Under chapter headings such as "Re-thinking Forestry," "Foresters and Forest Education," and "Regional Planning and Economic Policy," opinions are presented which demand specific answers. In presenting them Mr. Pack has accepted the privileges and responsibilities of an author to attempt to make people think by arousing their anger and indignation.

The book will not be quietly accepted but if it results in re-thinking forestry it will have accomplished what has been set forth as the real goal of the book, namely, "to stimulate economic thought, both among foresters and among the economic-minded section of the whole public, to stir up forces of criticism and construction and to obtain aid and direction from other minds in a situation wherein the very best talent is needed to win success."—G. H. C.

GUIDE TO THE APPALACHIAN TRAIL IN NEW ENGLAND, by the New England Trail Conference. Carney-Spicer Company, Boston. 85 pages, illustrated, and with six maps. Price \$1.50.

This Guide is one of a series of four, which will cover the entire Appalachian Trail,—the 2,100 mile through-tramping route from Katahdin in Maine to Mount Oglethorpe, in Georgia. The development of the Trail across New England is under the direction of the New England Conference and the detailed data for each section has been carefully prepared by prominent members. The Trail enters New England at Schaghticoke Mountain, on the New York-Connecticut line, crossing the Housatonic River, swinging east. Its impressive northern terminal peak—Katahdin—has been fully explored and is included in this Guide, the purpose of which is to supply detailed data and maps for the newer units of the through trail and to give a brief description of the route.—L. M. C.

Board Names Committee on Elections

The Board of Directors of The American Forestry Association has named Shirley W. Allen, School of Forestry and Conservation, University of Michigan, Ann Arbor; Scott Leavitt, Great Falls, Montana, and Mathew L. Rue, 815 15th Street, N. W., Washington, D. C., as the Committee on Elections to nominate candidates for office to be elected at the next annual election of the Association in December. Mr. Allen is chairman of the committee. In accordance with the by-laws the election of new officers is by letter ballot.

Suggestions for nominations for new officers of the Association may be submitted to the Committee on Elections by any member of the Association. Nominations may be made directly by the membership by not less than twenty-five members of the Association signing the nomination submitted. All suggestions and nominations should be addressed to the Committee on Elections at the main office of the Association and must be received by the Committee on or before November 1.

Waterfowl Regulations Delayed

Federal waterfowl regulations for 1933 have been delayed and may not be announced until after September first. These are based on recommendations of the Migratory Bird Advisory Board, which met in Washington in July. The American Game Association in a recent bulletin expresses the belief that the 1933 waterfowl season will again be two months and that the bag limits will correspond with those of 1932. Seasons for the individual States will be worked out by the Biological Survey in cooperation with State conservation officials.

The HKP FORESTER No. 3

(McKenney Type U. S. Pat. No. 1607470)



Easily Cuts Two-Inch Standing Green Wood

For reforestation work, cutting brush, roadside stripping, trail clearing, general improvement cutting in stands of all ages.

Patented slide shift power slot makes possible a powerful tool without excessive weight. Guaranteed to cut 2-inch standing greenwood. Simple, fast, safe. Write for folder showing tool in use and full details.

MADE BY
H.K. PORTER INC.
EVERETT MASS. U.S.A.
(Ask your hardware jobber)

Two Books of Supreme Importance GAME MANAGEMENT

By **ALDO LEOPOLD**
Consulting Forester

"It is permissible to suggest that Aldo Leopold's 'Game Management' will make history. . . No professional naturalist, no conservationist, no sportsman can fail to profit by a reading of 'Game Management.' In fact, one is tempted to say that members of the last two classes must read it if they are to feel entitled to express an opinion concerned with the protection of wild life." *N. Y. Herald Tribune.*

481 pages with index and bibliography. Drawings by Allan Brooks and many tables and diagrams.

SECOND PRINTING, \$5.00

THE BOB-WHITE QUAIL

Its Habits, Preservation and Increase

By **HERBERT L. STODDARD**

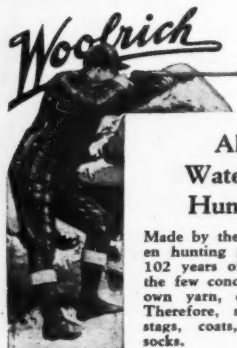
With a Foreword by Col. Lewis L. Thompson

"The first complete and thoroughly reliable study of any one of our native game birds from the point of view of the sportsman and the farmer. Mr. Stoddard has translated a highly scientific study in terms which any one may understand." *National Sportsman.*

64 pages of halftone illustrations and 4 color plates by E. R. Kalmbach. 600 pages. \$6.00.

CHARLES SCRIBNER'S SONS,

NEW YORK



All Wool Water-Proofed, Hunting Suits

Made by the originators of woolen hunting garments, backed by 102 years of service and one of the few concerns who make their own yarn, cloth and garments. Therefore, send for catalog of stags, coats, pants, shirts and socks.

WOOLRICH WOOLEN MILLS

John Rich & Bros., Woolrich, Pa.

Kindly send your catalog immediately.

Name _____

Address _____

Name of dealer _____

FOXBORO RANCHES

Where the Tall Pines Meet the Clouds
FLAGSTAFF, ARIZONA

MAKE the balance of the summer memorable. Visit the spectacular region of Northern Arizona. Stop-over privileges at the World's Fair arranged. Special rates make Foxboro possible now to the diminished purse. Parties forming to leave middle and end of the month—or can be arranged for any time. Incomparable summer climate. Open for fall hunting.

Eastern Office—20 E. 39th St., N. Y.

FOXBORO RANCHES

FRENCH RIVER

SPORTSMEN—
Motor to the Four-Way Lodge—Fish the Upper Waters for your Big Bass & Record "Musky." HUNTERS! A full Bag awaits you... A modern new camp in the true wilderness:—Address—

RED JACKET LODGE

On French River
NOELVILLE P. O., ONTARIO

FOREST TREES

A handy pocket-size book of 64 pages, containing illustrations and the distinguishing characteristics of 68 of the more common forest trees of the United States. Also gives both the common and scientific names.

30 cents, postpaid

The American Forestry Association
1713 K Street N. W. Washington, D. C.

Kill Weeds with Fire

Destroys weeds, brush and undesirable grass growth while green, seeds and all. Used extensively by Municipal, County and State Highway Departments, U. S. and State Forest Service for cleaning roadsides, irrigation ditches, fire trails, and backfiring to control forest fires. Ask for New Bulletin No. 108 K containing largest assortment torches and fire guns, 25 sizes in 7 styles.

Aerofil Burner Company, Inc.

West New York, New Jersey

176 N. Wacker Drive,

Chicago, Ill.

469 Bryant Street,
San Francisco, Cal.



RESURRECTING A FOREST MONSTER

(Continued from page 400)

as chief of the Division of Forestry, that in 1896 the fuelwood cut was 180,000,000 cords. His quantity plots perfectly at the top of the peak. No curve of very dissimilar form could agree with these data and also with the census of 1880.

Like those colossal forms in the Smithsonian, our cord-wood monster is huge beyond all expectation. By measuring the area enclosed by the curve we obtain an approximate quantity for the total fuelwood consumed up to 1930, and this approximation is no less than 13,250,000,000 cords. Of this total, 100,000,000 cords used between 1630 and 1700 is not within the scope of the diagram.

We have thought of sawed lumber as the giant of all the forest products, but when converted to cords at two cords a thousand feet and plotted, the giant assumes relatively modest proportions, as the diagram shows. Its bulk is 4,270,000,000 cords. Our total paper requirements in 1930 converted to cords would rise only to the 13,000,000 foot line on the graph—a mere dwarf by comparison.

A very large percentage of the fuelwood used in the past was used for domestic purposes. The largest estimate we have of industrial consumption was about 10,000,000 cords a year, and the industrial use was probably at its greatest between 1880 and 1900. Before 1880 the industrial development was relatively small, and after 1900 the use of coal advanced in great strides, as evident by the production figures.

At the present time almost two-thirds of the timber cut for fuelwood is hardwood. Hickory, oak, beech, sugar maple, aspen and birch have always been favorites as fuelwood on account of their high heating value and relative freedom from smoke and soot. A cord of dry hickory has about the same heating value as a ton of soft coal. The bulk of the 13,000,000,000 cord total was burned east of the Mississippi, where hardwood timber was accessible to the bulk of the population. It is not improbable that three-fourths of the total burned was hardwoods. This is in contrast with lumber, seventy-five to eighty per cent of which was softwood.

In 1930 nearly a fourth of the firewood was estimated as cut from saw timber trees. Americans have never been noted for their economy with timber, and wood cutting is hard labor. Small boys the country over detested the daily chore of keeping the wood-box full. By far the easiest and fastest way

to work up the twenty or more cords needed by a family was to split it out of straight, green tree trunks of good diameter, and forget the limbs and small or defective trees. We may surmise, then, going back through the years, that there was an increasing percentage of saw timber in the firewood cut, and that it was practically all saw timber 300 years ago.

Calculation on this basis indicates that 9,000,000,000 cords, nearly seventy per cent of the total, was from trees that could have been used for lumber. If we then deduct fifteen per cent for bark and convert the remainder at 500 feet a cord we have something like 3,750,000,000 board feet of saw timber used for fuel. That wood, cut in considerable part from finer hardwood trees than we shall ever see again—hickory, oak, maple, walnut, cherry—went roaring up the yawning throat of grandfather's chimney. It represents a quantity of lumber far greater than all the saw-mills together have cut since the earliest days, which has been estimated to be 2,135,000,000 board feet. It was a quantity so large that it alone would have supplied the lumber requirement of the world for most of the period since 1800. It also intimates that the old estimate of 5,200,000,000 board feet as the original saw timber stand may have been too conservative.

This story told of some other nation would sound like one of the wild exaggerations of Baron Munchausen. It seems like an incredible piece of folly—the burning of timber which converted to lumber might have had a market value of one hundred billions of dollars.

But was it folly? Ask the man who has spent a night without fire, exposed to the northern winter. Grandfather and his grandfather were no fools. They burnt a whale of a lot of good timber to keep their wives and babies warm, but they built the United States of America, and they couldn't have done it without fuelwood. So that's that.

Practically limitless quantities of fuelwood are still available in American forests. These reserves were drawn upon during the coal shortage of the World War and are a blessing now to many a family which can not buy coal due to unemployment in the present depression. Fuelwood made our civilization possible: it stands ready to save us in times of stress, just as it saved our forefathers from the iron grip of winter, long ago. Good old Lignotherium!

THE STORY OF "HAY HOLLER"

(Continued from page 389)

the age. It was more; it was a criterion of progress. To cut so many trees a day, roll and burn the logs of a given acreage was the badge of superiority, the topic of conversation of many a country store "session." When at a later date lumbering became profitable, milling went to the extreme of all but eliminating trees from the landscape. After lumbering of the larger and more desirable trees, came cutting of smaller and smaller sizes and finally the very small trees for wood pulp. The result is that the hills have been left bare, and the soil has washed away. The hill population has dwindled, schools have had to close or be supported by taxation of more prosperous counties, and living has been generally hardened.

Co-incident with the depression, farming developed specialization. "Corn and hogs" was the motto. The farmer no longer even attempted to grow his own garden truck. The apple orchard grew limby from neglect and the fruit worthless from coddling moth for want of a spraying. In the rich farming sections farming became a business. When the depression came, it fell with hardest force on specialized farms and least on the hill folks where the little farm was a home instead of a factory. The depression started in the hills a generation ago when they were cleared of trees. The slow insidious removal of soil from the slopes and the hard relentless impoverishment of the settlers has gone on for many years—in fact, the hill farm has been a hope-

When Writing Advertisers—Mention AMERICAN FORESTS

less struggle for over fifty years. The story is written not alone on the hills, but is graven in the faces and souls of the inhabitants.

The next time I visited Hay Holler was an early spring day in 1932. It was a gloriously bright day, with promise of summer coming up from the South. The hills were white in places with bluettes, spring beauties, dutchman's breeches, anemones, and bloodroot blossoms.

From the hilltop I looked in vain for abandoned homesteads. Where in 1930 were vacant houses, now families were living. Smoke curled up contentedly from old chimneys. The depression had driven the prodigals home. It has recently been said that in Vinton County where in 1929 more than half the houses were vacant, now not an empty house is to be found. Does this mean that the hill farms are coming back? Alas, no. The soil is gone that would support agriculture and industry.

The hills can come back through reforestation. And how forests are needed in the Central States! The process of erosion has gone so far in some regions as to have rendered the land practically worthless for anything but trees and it is questionable if the planting of trees even will be profitable for a long time to come. It is imperative, however, to stop erosion as quickly as possible. The washed material fills up streams to such an extent as to greatly aggravate flood extremes. With no forest cover to hold rainfall and check its

rapid run-off, surface water carries all movable soil with it. Plow furrows become ditches; ditches become gullies, and gullies become ravines. Truly it has been said, "The country which neglects its trees surely dies."

"Hay Holler" is gone never to return. Its day of prosperity was based on a fallacy. Its hill soil is depleted; it never should have been broken. Its surrounding forests are ravaged; they never should have been removed. Its people are impoverished; they did not know. The acres lying barren and scarred are a living witness of the mistake of trying to change Nature's forest land into farm land. Nations must learn by blind trial and error methods, and yet knowledge is before us if we will use it. "Hay Holler" in its agricultural connotation has gone. I rechristen it Peaceful Valley with the hope that it may at last be returned to its rightful function, that its hills may be again clothed in productive forests, that fine sturdy folk may again occupy the little valley farms and find needed employment in caring for their crops and their woods. I rechristen it Peaceful Valley in the hope that somehow there may again come into it re-adjustment and harmony with nature, that out of the wreck and mechanization of American life there may again come into the little isolated communities a dignity of living and a quiet communion with nature out of which in the past has sprung the living springs of spiritual leadership.

20,000 MEN IN PENN'S WOODS

(Continued from page 407)

tagious, scalp-tingling fear in Camp New Deal in Licking Creek Valley, in the Rothrock State Forest, among the colored boys that ink-black night when the screech owl first gave its ghostly serenade from the edge of the forest? Captain Lane, the commanding officer, is a Virginian. He knows negroes and they trust him, but it took all the persuasion of which he was capable to convince the boys that the terrifying noise came from a bird and not from a "hant."

But if the colored boys cowered under blankets from fear on black nights, don't imagine that they shirked work in brave daylight. Swinging out of camp in the morning in a lilting, jazzy sort of march to the singing of "Sweet Sue," they sang all day while grading road in the broiling sun and red dust, and they still sang at the end of the day.

Filling the scheduled quota of Pennsylvania's Emergency Conservation Work camps was completed in early July, and Tony now has 20,000 buddies in Penn's Woods. Scattered throughout the two and one-half million acres of the State's publicly owned woodlands—made up of State Forests, State Game Lands, National Forests are ninety-seven camps.

Within the 1,641,000 acres of State Forests are eighty-one camps, five on State Game Lands, and one each in the Cook Forest Park and on the Indiantown Gap Military Reservation. These eighty-eight camps are under the supervision of the Pennsylvania Department of Forests and Waters. Seven additional camps are located in the Allegheny National Forest in northwestern Pennsylvania, and there is one each in the Gettysburg (Battleground) National Park and in the North (Allegheny) County Park near Pittsburgh.

Each is maintained at its complete roster of 200 men. The camps have supervisory personnel of army officers, foresters, superintendents, foremen, blacksmiths, and other skilled help. All woods work is under the direct supervision of experienced woodsmen or technically trained foresters.

More than four million man-days of labor have been outlined for the State Forests, at least half of which consists of construction and maintenance of roads and trails to augment the present system of 2,700 miles of roads and 3,000 miles of trails. Extensive improvement cuttings are under way, particularly along main traveled highways where the operations may serve as demonstrations of approved thinning methods. Valuable by-products of these improvements will be stimulated tree growth, more sanitary forest conditions, and decreased fire risk.

The control of insect attacks and fungi infestations in the State Forests, though long recognized as a necessary function in the production of timber, has always lagged behind fire extinction as a forest protection activity. Now, thanks to the bountiful supplies of labor available, comprehensive pest eradication projects are in progress.

Dirt forestry—the common or garden variety of forestry, and the only kind that is going to grow timber—is being practiced in Pennsylvania, and practiced right in the woods. Here is some of the additional work that is being done: fire hazard control, particularly along railroads; telephone line construction and maintenance; and reforestation projects for future timber production, watershed protection, and flood control.

Make no mistake about it! Valuable and necessary work is being done by these Pennsylvania forest workers. They are not loafing. If the pessimist who libelled the workers as "babes in the woods" could see how quickly Tony Cellini, who literally had never before seen a double-bit ax, learned to use one—and, what is more, keep it sharp—he might be induced to revise his unfair statement that the "whole damn outfit is hopeless and worthless."

Not only are such opinions erroneous, but, when spoken carelessly before Tony and boys of his kidney, they are positively dangerous. They are proud of the way they have shaped up

A RELIABLE SERVICE FOR ESTATES

THE National Association of Gardeners has on file the names of many men fitted by training and experience for the care of fine gardens and greenhouses. The estate owner who wishes to engage a man for work of this kind can arrange, through the secretary of the Association, for interviews with men fully capable of handling the position offered. This service is rendered without charge to either party. Simply call VANDERBILT 3-0467 or write to

NATIONAL ASSOCIATION
OF GARDENERS

DOROTHY EBEL HANSELL, Sec'y.
522 Fifth Avenue, New York, N. Y.



**TREES
must be
pruned**

Reforestation Projects Should Include
BARTLETT EQUIPMENT
Compound Lever Tree Pruners, Pole Saws,
Cross Cut Saws and Tree Surgeons' Supplies
Write for free illustrated catalog showing
complete line.

BARTLETT MANUFACTURING CO.
3019 E. Grand Blvd. Detroit, Michigan

THE RICH FOREST-FIRE FIGHTING TOOL



The best and only
Patented Forest-
Fire fighter made.
Sold by the thou-
sand — proves its
merit.

NOTICE TO PUR-
CHASERS
This tool is protected
by U. S. and Canadian
Patents. Persons mak-
ing, using, or selling
infringing tools will be
prosecuted.

More of the Rich Tools have been sold
than all other similar fire tools combined,
proving their worth.

C. H. RICH Woolrich, Pa.

University of Maine

Orono, Maine

The Forestry Department offers a four
year undergraduate curriculum, leading to
the degree of Bachelor of Science in
Forestry.

Opportunities for full technical training
and for specializing in forestry problems
of the Northeast. Eight-weeks' camp
course required of all Seniors in Forestry,
in practical logging operations, on Indian
Township, Washington County, Maine, un-
der faculty supervision.

For catalog and further information
address

**FORESTRY DEPARTMENT,
University of Maine
ORONO, MAINE**

Hauck Fire-Guns AND Forestry Torches

used extensively by the U. S. Forest Service
ever since 1917 for Back-Firing, Safety
Strip Burning, etc.

Send for Free Bulletin

Special Bulletin on Weed Burners

Hauck Manufacturing Company

143 Tenth St., Brooklyn, N. Y.
296 Second Street 4657 W. Harrison Street
San Francisco, Calif. Chicago, Ill.

Harvard Forest

Petersham
Massachusetts

A forest experiment station of two thousand acres, twenty-five years under management on a sustained yield. Many phases of regional silviculture annually carried on. Besides participating in the handling of the forest, students conduct, in collaboration with the staff, research projects in management, silviculture, silvics, soil physiology, entomology, and pathology. Competent students accepted as candidates for the degrees of M.F. or Ph.D.

RICHARD T. FISHER
Director



Audubon Bird Cards

Post-card size in color from original paintings by Allan Brooks

Reverse side of each card carries an account of the habits and distribution of each bird. Prepared under the supervision of Dr. Frank M. Chapman.

Set No. 1—Fifty Winter Birds of Eastern North America

Set No. 2—Fifty Spring Birds of Eastern North America

Set No. 3—Fifty Summer Birds of Eastern North America

\$1.00 per set, postpaid

**THE AMERICAN FORESTRY
ASSOCIATION**

1713 K St. N. W., Washington, D. C.

MOUNTAIN CANARIES COME NORTH

(Continued from page 391)

that paper was an especially rare tidbit to their nefarious palates. They browsed, however, on the very scantest and poorest of forage and appeared to get fat on what they found. We never packed grain or hay, but always fed them extra hot-cakes, biscuits, potato peelings, or other table scraps, which they were particularly fond of. We were practically forced to sleep on our supplies to keep them safe at night and never dared leave anything like flour or sugar uncovered.

We lived on spinach, pork and beans—all that was left of our stock—for the next five days, and it took me two full days to replace the field notes which Grandma had devoured out of the notebook.

At Martin Creek Grandma's love for garbage proved her undoing, much to our amusement and pleasure. It so happened that as soon as we arrived at that camp Grandma nosed out the garbage pit and promptly led the rest of the caravan to those heaven-scented premises. Hardly ten minutes had elapsed before we heard a wild thrashing of brush and much hee-hawing. The ring-leader, completely healed of her limp, came galloping straight for the cabin in much more of a hurry than I ever saw her before—or after. She bucked high and wide and finally headed away up the creek into the brush, shaking her knotty head. A swarm of yellow jackets pursued.

The burros never strayed far away from camp and were, as a rule, gentle and easy to catch. However, there were instances of not too infrequent occurrence in which Brooks hunted far and wide without success. Then on the point of giving up, he would spy out a patch of mouse-colored hide behind some clump of brush or tree. On closer approach it would be plain from their alert behavior that they were aware of being stalked and that there was more method in this hiding than mere happenstance. Grandma, on such occasions, was always in the deepest cover and quiet as a snake.

The little fellows, when not packed with loads over 125 pounds, carried on day in and day out, very slow, to be sure, but generally as sure as they were slow. We never averaged more than two miles an hour on the best of trails nor could they be goaded to a faster pace.

After the trouble we had with Tiny in crossing the bridge we anticipated plenty more in crossing back over a ford. But when the day arrived the burros stood the test as well as mules and, even when the water swirled up over their short legs, they plunged ahead. Not once all summer did one of them go down in a tight place.

Their dogged devotion and pluck finally won so much of our approval, in spite of their mischievous habits, that we came to welcome their company with something bordering on affection. After the first few weeks Brooks leniently spared the rod—nor did he spoil them with kindness. He taught them obedience and servility and they taught us all patience—even to tolerating Grandma.

We covered our outlined miles of trails and came to the conclusion long since arrived at by Stevenson in his *Travels with a Donkey* that, while there is a world of woe for humans in the crafty brain of a burro, there is a place there for fidelity, service and companionship. It was with a genuine twinge of regret that we left them in the fall. While the Service has abandoned them as not being worth can wrappers, we at least are agreed that they did have a place in our work and can be used in the North woods as well as the South.

The New York State College of Forestry

SYRACUSE, N. Y.

Undergraduate courses of four years are offered in forestry leading to the degree of Bachelor of Science. There is also opportunity for graduate work in several branches of forestry leading to advanced degrees.

The Marshall Memorial science building, approximately 20,000 acres of experimental forest lands in various sections of the State and the Roosevelt Wild Life Experiment Station at the College afford excellent opportunities for practical work in forestry.

Modern plants for instruction in pulp and paper making, in kiln-drying and timber treating and a portable sawmill are features of this completely equipped institution. Catalog mailed on request.

SAMUEL N. SPRING, *Dean*

School of Forestry

University of Idaho

MOSCOW, IDAHO

Offers thorough training in Practical Forestry, preparing for Federal, State, and private work.

Four and Five Year Courses, leading to the degrees of Bachelor of Science in Forestry and Master of Science in Forestry respectively.

Opportunity is given to specialize in General Forestry, Logging Engineering, and Range Management.

Large logging and milling operations, important wood-working industries, also extensive Federal, State, and private forests, near at hand. Excellent opportunity for summer employment.

For further particulars address
FRANCIS G. MILLER, *Dean*

RATTLERS AND THEIR BITES

(Continued from page 398)

The next day a finger on Tom's right hand began to swell. The pain in his hand and arm became excruciating. The inside of one finger showed an angry looking spot where the skin had been broken by a "hot rope," a not uncommon accident in roping without gloves. One of the men with the wagon, an old timer on the range, at once diagnosed the trouble as caused by rattlesnake venom deposited by the angry snake on the rope with which Tom had whipped it to death. Whatever the cause, it was evident the boy was in a mighty serious situation.

There was not a drop of whiskey in camp but we performed some heroic cowboy surgery on that finger. With a sharp knife it was opened clear to the bone, bringing a heavy flow of blood. Later I realized this was probably what saved him. Then, of all things that probably should not have been done, we followed old timer's advice and laid a fresh "chaw of terbaccer" over the wound and wrapped the offending finger and hand with bandages torn from the cook's dish towels. The "Hoodlum Wagon" was then unloaded and the boy, almost unconscious by this time, was hustled off to town, twenty-five miles distant. Even when we reached town the nearest doctor was a hundred miles away. But a good old Mormon lady who had eased countless infants into the world in her time took charge of his case.

After hearing his story of killing the snake she at once diagnosed his trouble. The snake had struck his rope and deposited a drop or two of venom on it. Coiling up his rope, some of the poison got into the little place on his hand where the skin had been broken.

Cowboys of those days were a hardy lot. Tom Egger was back at the wagon inside of ten or fifteen days but he carries a deformed middle finger to this day, perhaps from the venom, more likely from our crude surgical methods. One of the first things he did after his return was to untie the rope from his saddle and throw it into the cook's fire.

Later on some of us learned the why and wherefore of the apparent blindness and sour disposition of the rattler during August and September. In common with most snakes the rattler sheds his skin annually. The process is probably not a comfortable one with the loose tags of dry skin hanging from his sinuous frame and especially from around his head covering the eyes. He is unusually alert and on guard.

I well recall the first horse we had bitten by a rattler. The "remuda" had been hobbled out for the night and as they scattered out to feed, I noticed my pet "cutting horse" nibbling around the base of a small sage bush. Suddenly he gave a snort and threw up his head, just as a rattler launched itself at him. The horse was quick but the snake was quicker. He struck just above the nostril and hung there for several seconds, his body writhing, his rattles sounding the alarm.

The horse evidently had no nervous reaction for with the snake gone he continued his grazing as if nothing interesting had happened to him. Having killed the snake we investigated the animal's condition. Several inches above his right nostril was a tiny drop of blood. In the center of this was a white speck, which I guessed to be one of the rattler's fangs. This was worked out of the flesh with a knife blade and rolled up carefully in a bit of paper for further investigation. When we got to town a magnifying glass showed it to be one of the reptile's fangs, sunk so deep in the flesh that it pulled loose.

I saw this same thing happen to a "Snake King" several years later in Phoenix, Ari-

zona, when an angry rattler he was handling sunk his fangs deep into his left hand. The man swung his arm vigorously to shake the snake loose. We dug a fang out like a splinter and kept it for a souvenir. The Snake King was somewhat upset but gamely scarified the spot with a knife. After it had bled for a few moments he poured the anti-snake remedy he was selling over it, wrapped his hand in a handkerchief, and went on with his program. He had the courage of his convictions. The next day his hand and arm were badly swollen but he did not lose a meal nor an hour's time in consequence. He had been bitten a number of times and I always felt he had become partly immune to the venom.

Do animals fear snakes as do humans? I very much doubt it. Their movements attract them but the claim that either cattle or horses sense the danger from a rattler cannot be sustained, in my opinion.

Occasionally on the ranges we would find a horse or a cow suffering from what was probably a rattlesnake bite, always on the face. But when you consider the millions of cattle and horses that graze on the ranges, constantly poking their noses under sage bushes and yuccas for feed and into all sorts of odd corners where one finds rattlers, the number of live stock struck or killed is extremely small.

Many years ago as a side line to the cow business I embarked in the curio business at Phoenix, Arizona, chiefly to handle Navajo blankets and Indian baskets. I was also rather keen on articles found in ancient ruins which are so plentifully scattered over that distant region. To encourage the local Indians to bring in such things we always bought any old pottery, arrow heads, and bone bracelets, counting on finding something good in the stuff—which we often did.

A Maricopa Indian brought us a couple of rattlers in a gunny sack one day. We did not see any value in them but to get rid of the fellow we gave him four bits, hardly knowing what we were going to do with them at the time. They lay in a sack for two days pending a decision as to their future. Meantime the good news spread over the Indian country. Rattlesnakes, hitherto a drug on the market, had a cash value at last.

The traffic in rattlesnakes that followed our first four bit investment is a story all to itself. The whole country oozed rattlers all headed for our store. Came with them also lizards, horned toads, chuck a wallas, gila monsters and desert tortoises. Our storage facilities had to be enlarged repeatedly. At that time there was a Frenchman by the name of Michael Bourgenon hanging around Phoenix, who had attended the Hopi Indian Snake Dance and thought he knew all about rattlers and their personality. He was a man of excellent education, a geologist, botanist and tremendously interested in reptiles. One day much against our wishes he got a big fellow out of the cage and was showing some visitors his skill in handling him. Suddenly there came a shriek of terror from the Frenchman, and there he stood with that huge snake hanging from his hand with a vice-like grip. When he was finally torn away one fang remained buried deep in the hand between the thumb and first finger. A tourniquet was at once applied to his arm and the bite slashed with a knife blade until the blood simply poured from the wound. We knew nothing of permanganate of potash in those days, whiskey being the only known remedy. In spite of everything two doctors could do, the man died in frightful agony the following afternoon.

After that we kept our snakes under lock and key.

When Writing Advertisers—Mention AMERICAN FORESTS

NURSERIES

Trees for Forest Planting

PINE :: SPRUCE

Firs, Arborvitae and Other
Conifers. We raise all our
trees in our own nurseries

KEENE FORESTRY ASSOCIATES
KEENE, NEW HAMPSHIRE

PLANT your vacant land
NOW to help
UNEMPLOYMENT. Evergreen Tree
Seedlings and Transplants at
— SPECIAL LOW PRICES —
ELFGREN NURSERIES
East Killingly Connecticut

Peony Aristocrats

for your yards and gardens
Best varieties Attractive prices
Finest quality roots liberally graded
22nd Annual Catalog Ready
HARMEL PEONY COMPANY
(Wholesale Growers) Berlin, Maryland

Young Aristocrats

Rare and unusual grafted trees and shrubs
about 12 inches high at amazingly low prices.
Azaleas, Rhododendrons, Magnolias, Japan
Maples, Franklinia tree, etc. Balled and bur-
lapped; can be shipped all summer. Write
for list.

KELSEY NURSERY SERVICE
50 Church Street, New York City

FRANKLIN FORESTRY CO.

Nurseries at
Sudbury, Shelburne Falls and Colrain, Mass.
EVERGREENS AND PERENNIALS
SEND FOR CATALOGUE
89 STATE ST., BOSTON, MASS.

TREE PEONIES

finest named varieties
HERBACEOUS PEONIES

best varieties
REDUCED PRICES
Fall is the best time to plant Peonies
OBERLIN PEONY GARDENS
425 PENN AVE. SINKING SPRINGS, PA.

If you do not find just what you want
in the advertising columns of AMERI-
CAN FORESTS, Write for full informa-
tion. Let us find it for you.

THE AMERICAN FORESTRY
ASSOCIATION

1713 K Street N. W. Washington, D. C.



"Remembered Men"

RECENTLY started into action was an army of 300,000 young men—members of the Civilian Conservation Corps—a group whose future every American citizen is interested in.

Follow their activities through the medium of AMERICAN FORESTS Magazine. Tell your friends of the one publication carrying each month details of the work which these men are doing on more than half of the forest land in the United States.

Their work, which is divided into 4 classes—1. Forest Production work, 2. Forest Improvement work, 3. Flood Control or Soil Erosion work, 4. Fighting rodents,—offers unusually interesting reading.

Help us create public interest in the Civilian Conservation Corps by clipping out the coupon below and handing it to some friend or business associate. All three of us will be benefited by your action.

Application for Membership in The American Forestry Association

The AMERICAN FORESTRY ASSOCIATION
1713 K Street N. W., Washington, D. C.:

Date.....

I hereby apply for membership in The American Forestry Association and enclose \$.....

INDICATE CLASS OF MEMBERSHIP DESIRED

- ☐ Subscribing Membership, per year, including Magazine..... \$4.00
- ☐ Contributing Membership, per year, including Magazine..... 10.00
- ☐ Forester Fund Membership..... 10.00
- ☐ Sustaining Membership, per year, including Magazine..... 25.00
- ☐ Life Membership (no other dues for life), including Magazine..... 100.00
- ☐ Patron Membership (no other dues for life), including Magazine..... 1,000.00

Canadian Postage 25c extra, Foreign 50c extra, on Subscribing Memberships

PLEASE LETTER OR TYPE NAME AND ADDRESS

Name

Street

City and State

Business or Profession

FOREST PAGE FOR BOYS AND GIRLS

(Continued from page 413)

squaws were known by the character of the poles they provided; the straight, smooth, light, strong ones being the most desirable. The common method of erecting a ten-foot tepee is as follows: Tie three poles together eleven feet from the ground. Spread these out in the form of a tripod. Place six poles in the angles formed by the first three, spreading out the lower ends in a circle somewhat smaller than the intended size. Leave a space for the final pole opposite the side you have selected for the door. Bind these nine poles together at "A" (Figure 1) by throwing a slip noose over the top. This rope attached to the ground in the inside serves as an anchor in case of wind. We are now ready for the cover. On the tenth pole tie the rope "de" ten feet above the larger end. Now raise the pole and tepee cover and rest it in the angle reserved for it opposite where the door is to be. Thrust the small ends of the two remaining poles in the pockets of the smoke flaps and bring the top of the canvas around the frame. Bring the wings around the frame until they overlap; fasten together with the lace pins. Stretch out the poles until the canvas is tight, peg down the edges with stout stakes made of forked branches, drive a stout stake inside the tepee for the anchor rope, and the tepee is ready for occupancy.

A small fire place may be made in the center of the tepee, and a kettle hung from the center where the poles come together. A tepee is the best form of shelter for regulating the smoke of an open fire. Here a boy can do his reading, cook some of his own meals, and sleep out of doors. With a jack knife he can make the things he needs for his tepee, as a coat hanger out of a small branch of a tree; hooks out of the crotch of a branch; a broom to sweep out the tepee of the switches of willow or of birch; a camp lantern out of a tomato can, and a camp rake out of forked branches of some hard wood. With a jigsaw he can cut birds out of plywood, color them with crayola, then varnish them and place them on fences, in the trees and bushes and on the grounds where the birds are generally seen. Out of an old orange crate he can make a book case and writing desk, or a cupboard for his dishes and a table to eat on. He will soon have a hundred different wants and will find ways to satisfy them. He will not want for companions either.

Soon there will be need for a bow and arrows and a target; or a sling the likes of which David used to kill the giant Goliath. Soon there will be a hunt for the Indian turp to taste it for an enduring memory of it; and the blood root to use for war paint. Soon there will be a search for a clean pole to carve and paint for a totem pole. Next there will be a need for war bonnets, and the tom turkey will be missing some of his proud tail feathers.

The plain tepee cover will become too ordinary, and soon there will be a consultation of the braves to settle the important question of how to decorate the tepee cover.

Civil Service Examination for Junior Forester

Application for junior forester and junior range examiner to fill vacancies in the United States Forest Service, must be filed with the United States Civil Service Commission, Washington, D. C., by September 26, 1933. Entrance salaries range from \$2,000 to \$2,600 yearly. This is the first Civil Service examination for these positions in two years.

Classified Ads

Advertisements from reputable individuals and concerns will be inserted under this head at the rate of 10¢ a word per insertion, cash with order. Display rates on application. No advertisement will be inserted for less than \$1.00. Abbreviations, initials and letters will be counted as words. Name and address must be given, as advertisements will not be inserted in this section with only a box number. Address all orders to Classified Advertising Department, AMERICAN FORESTS Magazine, 1727 K Street, N. W., Washington, D. C.

Attract Wild Ducks
with Wild Rice, Wild Celery,
Sage Pondweed Seeds, etc.
Pioneers in the development of better Hunting
and Fishing Grounds. Write for low prices.
WISCONSIN AQUATIC NURSERIES
Box 531-K, Oshkosh, Wis. Booklet on Request

Taxidermy

GLASS EYES, TAXIDERMIST, SUPPLIES,
Tools, Panels, Etc., "Schoepfer Eyes," 134 West
32nd Street, New York.

Tree Surgery Supplies

CABLE, LAGS, ROD, ETC. WHOLESALE
Listings. Rollin Tabor, Mount Vernon, Ohio.

Miscellaneous

TREE STICKS—Measure your Southern Wood
Lot or forest with specially designed Tree-Scale
Stick and Log Scale Stick. Mailed in Canvas
container with instruction book. \$1.00 set post-
paid. Address: American Forestry Association,
1727 K Street, N. W., Washington, D. C.

Cameras

SAVE 35% TO 60% on used or new Kodaks,
Cameras, Motion Picture Cameras. Latest Bar-
gainingrams will be mailed free. Write for your
copy to Camera Headquarters, BASS CAMERA
COMPANY, 179 W. Madison St., Chicago, Ill.

Pheasants

Beautiful Melanistic Mutant, Mongolian and
Ringneck Pheasants will add color and sport to
your property. Easily reared, and thrive wild.
Finest stock at lowest prices. Wallace Grange,
Ephraim, Wisconsin.

TOOLS For America's Emergency Conservation Program

AEROIL BURNER CO., INC.

Page 426

Torches and Fire Guns. 7 different types.
Write for Bulletin.

BARTLETT MFG. COMPANY

Page 427

Tree Pruners, Pole Saws and Cross Cut
Saws. Write for catalog.

FENWICK-REDDAWAY MFG. CO.

4th Cover

Ranger Special Water Bag and WAJAX
Portable Fire Pump.
Write for catalog.

HAUCK MFG. CO.

Page 428

Torches and Fire Guns. Write for catalog.

PLUMB, INC., FAYETTE R.

The famous PLUMB AXE.

Page 421

PORTER, INC., H. K.

Page 425

Forester Pruning Tool No. 3. Write for
folder.

RICH, C. H.

Page 427

Forest Fire Fighting Tool. Write for
booklet.

SMITH & CO., D. B.

Page 422

Indian Fire Pumps

WARREN TOOL CORPORATION

Page 419

Forestry Tools of every description.

Historical Groves

In order that every state, county, and city may have its historical grove similar to the one in the Nation's Capital, the committee which represents Boy Scouts of America, The American Forestry Association, American Walnut Manufacturers' Association, and United States Department of Agriculture will furnish the living corner stones of these natural temples. "The goal of these memorials which are built tree by tree instead of stone upon stone," says G. H. Collingwood, forester of The American Forestry Association, "is to honor all the great men and women and events of each locality by planting trees obtained from sites associated with them. For example, a grove in Ohio's capital should have trees from the homes of the seven Ohio Presidents; a grove in Nebraska would not be complete without one from grounds associated with J. Sterling Morton, the Nebraskan who established Arbor Day; Mark Twain or the cave which was the scene of the adventures of Tom Sawyer should be memorialized in a Missouri grove. Governors, first settlers, Indian camps, all have a place in Historical Groves."

To each of the first three organizations in each state which arranges fitting ceremonial programs the committee will send two Trees with Traditions to serve as a nucleus of the Historical Grove. They are young walnut trees which have been grown in an approved nursery from nut seeds gathered at nationally famous shrines. Although the only trees which are accepted in the National Historical Grove are those which have national fame, the committee recommends that state and community Historical Groves should supplement their major purpose of perpetuating native nut trees by memorializing local history.

In the preparation of lists of historical grounds, state by state, the committee discovered a lack of appreciation and knowledge of state and county history. Even the part a certain section may have had in national affairs was more frequently overlooked than not. The most common answer to the request "Give the names of famous men or women or interesting events in your county," was "None." This, in spite of the fact that the community may have had its beginnings in the days of Spanish exploration, French settlement, or pioneer adventures, or was the scene of events associated with the Revolution.

The National Historical Grove is located in one of Washington's riverside drives. It is in Anacostia Park, readily accessible to the city, and can be used for Scout rallies and other organization meetings. It was dedicated by Dan Beard and now possesses twenty-three trees, eight of which are associated with Presidents of the United States. The present President's tree from Krum Elbow is planted there.

Several organizations are planning to establish Historical Groves as the feature of the Nutting Day Pilgrimages this fall. The two nut trees sent by the committee in Washington and nut trees from state or county shrines will be planted at ceremonies during the nut seed harvest. In addition to presenting two Trees with Traditions the committee will furnish planting directions and a suggested Historical Grove dedication program. Requests for Trees with Traditions should be made to: National Nut Tree Planting Committee, American Forestry Association Building, 1713 K St., N. W., Washington, D. C. Shipping charges must be defrayed by the organization planting the trees.

When Writing Advertisers—Mention AMERICAN FORESTS

UNIFORMS OF DISTINCTION

For All Occasions

EVERY GARMENT
CORRECTLY BUILT
TAILORED TO
MEASURE AND
GUARANTEED
TO FIT.

Write for
Catalog and
Price List

SMITH-GRAY

740-2-4 Broadway,
New York City

Established Since 1845



U. S. Forestry
Regulation

GAME AND FISH DEPEND ON FOR-
ESTS AND STREAMS. BOTH ARE DE-
STROYED BY FIRE. PREVENT FIRES
AND SAVE OUR WILDLIFE.

The Voigtlander

BRILLIANT

Shows You a FULL VIEW
Picture While You Take It
(Just Like an Expensive Reflex)



\$13.75

Leather Case with
Shoulder Strap
\$2.75

The Brilliant is the most compact reflect-
ing camera made—size 2½ x 4½ x 2½.

It's light in weight and easy to carry.
Fitted with F7.7 Anastigmat Lens and
Automatic Shutter; takes Standard
Brownie No. 2 film and makes 12 pic-
tures to the roll 6 x 6 cm.

Send for FREE booklet A. F.

WILLOUGHBY

110 West 32nd Street, N. Y.

Camera Headquarters :: Established 1899

Index to
ADVERTISERS
SEPTEMBER, 1933

	PAGE
Aeroil Burner Co., Inc.	426
American Tel. & Tel. Co.	2nd Cover
Bartlett Manufacturing Co.	427
Bass Camera Co.	431
Berlin Glove Company	423
Cavalier Hotel, The	418
Chalfonte-Haddon Hall	420
Elfgren Nurseries	429
Fechheimer Brothers Company, The	424
Fenwich-Reddaway Mfg. Co.	4th Cover
Foxboro Ranches	426
Franklin Forestry Co.	429
Grange, Wallace	431
Harmel Peony Company	429
Harvard Forest	428
Hauck Mfg. Co.	428
Herbst Brothers, Inc.	419
Idaho School of Forestry	428
Keene Forestry Associates	429
Kelsey Nursery Service	429
Kelsey Nursery Service	424
Leitz, Inc., E.	422
Mears, A. H. G.	424
Maine School of Forestry	427
National Association of Gardeners	427
New York State College of Forestry	428
Oberlin Peony Gardens	429
Plumb, Inc., Fayette R.	421
Porter, Inc., H. K.	425
Red Jacket Lodge	426
Rich, C. H.	427
Schoepfer, G.	431
Scribner's Sons, Charles	425
Smith & Co., D. B.	422
Smith-Gray	431
Tabor, Rollin H.	431
Troutdale Cabins	423
Warren Tool Corporation	419
Western Maine Forest Nursery	423
Willoughby Camera Stores, Inc.	431
Winchester Repeating Arms Co.	417
Wisconsin Aquatic Nurseries	431
Woolrich Woolen Mills	426

Reorganization Affects National Parks

The National Park Service merged on August 10 with other government offices dealing with the administration of public buildings, reservations, and national cemeteries to form the Office of National Parks, Buildings and Reservations, under the Department of the Interior. This was in accordance with President Roosevelt's executive order of reorganization presented to Congress on June 10. Arno B. Cammerer is Director, succeeding Horace M. Albright, and E. A. Demaray is Assistant Director.

The new Office of National Parks, Buildings and Reservations takes over the functions of the Arlington Memorial Bridge Commission, the Public Buildings Commission, the Public Buildings and Public Parks of the National Capital, the National Memorial Commission, the Rock Creek and Potomac Parkway Commission, the Commission of Fine Arts, the George Rogers Clark Sesquicentennial Commission, the Rushmore National Commission, and the National Cemeteries and Military Parks located within the continental limits of the United States.

Previous to the accomplishment of this portion of the executive order, a statement was issued postponing until sixty days after Congress convenes in January, the proposed reduction of twenty-five per cent in Federal payments for agricultural experiment stations and extension work, and for the maintenance of the State colleges of agriculture and mechanic arts.

Dutch Elm Disease Breaks Out Anew

The Dutch elm disease has broken out anew in the United States. This time it has been found in the State of New Jersey. Already sixty-nine authentic infected trees have been found scattered among the elms of an area of perhaps a hundred and fifty square miles in Essex, Hudson and Passaic Counties, according to R. Kent Beattie of the Bureau of Plant Industry. The Public Works Administration, acting under the National Industrial Recovery Act, has authorized the Department of Agriculture to spend up to \$80,000 to combat the disease.

This new epidemic infection is in the vicinity of our largest seaport and is in an area where the elm is one of our most important trees, and it is also feared that the disease may be present in other localities from which it has not yet been reported.

John M. Briscoe

John M. Briscoe, Professor of Forestry and head of the School of Forestry at the University of Maine, at Orono, since 1910, was drowned while swimming on August 4.

Professor Briscoe was born in Pottsville, Pennsylvania, on July 22, 1878, and after serving with the engineering corps of the Philadelphia and Reading Coal Company, for which he was prepared at the Massachusetts Institute of Technology and the University of Pennsylvania, graduated from the Yale Forest School in 1909. For two years he was Forest Assistant with the Forest Service, engaged in forest reconnaissance in Kentucky and eucalyptus studies in Florida. He was a senior member of the Society of American Foresters, and has written for AMERICAN FORESTS, The Journal of Forestry, and other magazines.

WHO'S WHO

Among the Authors in This Issue

HENRY CLEPPER (*20,000 Men in Penn's Woods*) is connected with the Department of Forests and Waters at Harrisburg, Pennsylvania. He has written extensively on forestry subjects, frequently for AMERICAN FORESTS.



Henry Clepper

JOHN T. AUTEN (*The Story of "Hay Holler"*) is a silviculturist associated with the Branch of Research, United States Forest Service. He is at present engaged in forest soil studies in the Central States, with headquarters at Columbus, Ohio. Illinois is his native state, and he is a graduate of the University of Illinois.

R. V. REYNOLDS (*Resurrecting a Forest Monster*) is in the Washington office of the United States Forest Service in the Division of Forest Economics. He is a graduate of Amherst College and through his official work has become a recognized authority on forest and lumber statistics.



R. V. Reynolds

WILL C. BARNES (*Rattlers and Their Bites*) is living in Arizona, where he has been completing a book on the history of the state. He was formerly secretary of the National Geographic Board and was for more than twenty years with the United States Forest Service, as assistant forester in charge of range management.

WARD SHEPARD (*Tree Arboretum or Forest Arboretum?*) was formerly a member of the United States Forest Service but for the past few years he has been in Berlin making a study of German forestry with particular reference to its application to conditions in America.

PAUL HOSMER (*The Joys of Acrophobia*)

lives in Bend, Oregon, from where he writes us that he has had a good deal to contend with most of his life since for ten years or so he has been writing stories about lumbermen and for about ten years before that he spent his time dashing around the countryside on police runs, searching for news for his paper.



Paul Hosmer

WAKELIN MCNEEL (*Forest Page for Boys and Girls*) is engaged in club work at Madison, Wisconsin.

When Writing Advertisers—Mention AMERICAN FORESTS



st
e
st
a
f-
in

boys
di-